Tuesday April 13 1982



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NEWS SUMMARY

BUSINESS

duction last month averaged well below the 7m barrels a day output ceiling set at last

month's Open meeting and it is considering another 500,000 harrels a day cut to check the

downward pressure on world prices. Seria has claimed to

have shot off Irau's pipcline to

the Mediterranean. Back Page.

• WALL STREET was 0.95

lower at 841.99 shortly before the close. Page 23

CENTRAL ELECTRICITY

Generating Board has told the Government it wants to increase

substantially its coal imports this year, which could start a row with miners' unions. CEGB

imports are presently held back

to 750,000 tonnes a year. Page 6

reform package proposed by

BL Cars' management has run

into opposition from the com-

◆ A COMPROMISE over Presi-

dent Reagan's controversial proposals for the 1983 U.S. bud-get seems liklier in Washington.

• UK TEXTILES and garments

trade was in £1.04bn deficit last

year with imports up 7 per cent and exports down 16 per cent

• THE GOVERNMENT seems

to be ignoring calls for tax con-

cessions on petrochemical raw materials by BP Chemicals and

fears are growing of a plant closure at Grangemouth, Scot-

Rupert Murdoch, owner of the New York Post, says he would

be ready to buy the New York

Daily News, but would propose nothing definite until Joe All-

\$5.5m (£3.13m) for photocopy

• BP CHEMICALS has doubts

about the safeguards designed

to protect its synthetic alcohol

business written into the EEC

• A RISE in Belgian interest

rates helped the Belgian franc

improve within the European

Monetary System last week, although it remained the weak-

est member. The French franc showed little change, but mar-ket speculation about a possible

realignment increased ahead of

EMS April 8,1982

ECU DIVERSENCE

currency touched a

wine agreement. Page 7

britton's option expired.

of Chicago. Page 4

by volume. Page 4

pany's two higgest unions.

INDUSTRIAL relations

GENERAL

Ecevit Saudi oil held output over BBC falls short of target interview

Former Turkish Prime Minister • SAUDI ARABIAN oil pro-Bulent Ecevit was detained again in Ankara only hours after a military court had ordered his release.

The court had heard charges that Mr Ecevit, 56, had given an interview to a Norwegian newspaper in defiance of Govern-ment orders. He was accused of issuing false and exaggerated statements detrimental to Turkey's prestige and authority

Mr Ecevit, the chief opponent of the military regime, is now being held in connection with an interview given to the BBC.

Steeltown aid

The EEC is to allocate £30m, spread over five years, in an extra aid package for steel and shipbuilding areas of Britain.

Children die

Four children—the eldest aged five - died in a fire at a maisonette in Lambeth, south London. Their mother, who had been at an all-night party returned home at 8.30 am as firemen were putting out the blaze.

Teenagers shot

Three merseyside teenagers died in a mystery shooting tragedy in North Wales. The bodies of twins Mark and Michael Otter and a friend were found near their holiday caravan at Trawsfynydd, Gwynedd. Police believe no-one else was

Yacht death

The body of a woman who fell overboard from a yacht in a • AUSTRALIAN publisher race off Hartlepool was recovered by lifeboatmen. The search for a man from the yacht fleet continued.

Holiday arrests

Shop windows were smashed in Scarborough, and fighting broke out over the weekend after gangs of youths attended a motor-scooter rally. More than 130 were arrested. In Southend, more than 80 arrests followed fighting between skinheads and

Terror shooting Terrorists in speeding cars fired

shotguns and hurled grenades at a police hus outside the converted courthouse in Rome where the alleged killers of former Italian premier Aldo Moro go on trial tomorrow. Three policemen were wounded.

Nuclear protest

West Germany's anti-nuclear peace movement said 450,000 took part in Easter marches in protest against more U.S. missiles in Europe. Page 2. In Oxfordshire, protestors failed in an attempt to set up a peace camp outside the U.S. Air Force base at Upper Heyford.

Sleepless week

A 55-year-old Frenchman is attempting to go without sleep for a week to try to win state aid for a printing company in

Alencon which employs handicapped young people. Briefly . . . Ferry sank near Rangoon on

Sunday. More than 70 were

feared drowned. Galunggung volcano in Indonesia erupted on Sunday, six days after the last eruption.

Kenya safari motor rally was by Nairobi car dealer Shekhtar Mehia for the fourth successive year. Spanish Footballers' Association the Irish punt. The D-mark

called off a pay strike by stayed at the top of the system, players through lack of support. continuing its steady rise.

. CONTENTS -

French

U.S.: a downturn with a Commercial law: digest of difference 14 Hilary term cases FT Index: still no equal after 20 years 15 Around Britain: N. Ireland textile jobs threatened 6 Lombard: Samuel Brittan Technology: computer born on funny money 15 in a castle 12 Management: pooling re- Survey:

Editorial comment: Falklands crisis; inner cities 14

the long Easter week-end; as the

record low against the dollar. Eurolira rates fel as the lira improved slightly, moving up by about the same amount as

sources in Italy 10 Electronic Office Inset

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Haig likely to return to Buenos Aires today: Parliament debate tomorrow

هكدامن الأصل

Argentine offer outlined to Thatcher

BRITAIN and Argentina yesterday showed first signs of edging back from confrontation over the Falkland Islands as talks between Mrs Margaret Thatcher, the Prime Minister, and Mr Alexander Haig, the U.S. Secretary of State, continued late into the evening.

No. 28,747

Mr Haig was reported to have discussed with Mrs Thatcher a firm offer by Argentina to with draw its forces from the Falk-

lands, provided Britain recognised Argentine sove-reignty over the islands, ordered and end to its naval blockade of the Falklands and ordered its task force to return home. The British ban on Argentine

vessels entering a 200-miles "maritime exclusion zone" around the Faiklands come into effect at 0400 GMT vesterday. But, though the British Government had made it clear that any Argentine vessel found within this zone after the deadline risked being sunk, no incident

had been reported by last night. The Defence Ministry in London said that there had been no reports of Argentine war-ships or naval auxiliary vessels within the zone since it was established. The Ministry confirmed that all but two of Argentina's major warships were still in port as they had been on Saturday. The Ministry would not comment on the whereabouts of the two remaining vessels, which are believed to be a corvette and, possibly,

one of Argentina's two Type 42 British-built destroyers. The ministry, though it is now giving daily briefings is still refusing to disclose any details on the location of the British naval task force an othe rules of engagement which might



The Prime Minister with Mr Alexander Haig. U.S. Secretary of State, outside 10, Downing

• Argentine offered to end its military occupation of the Falkland Islands if Britain recalled its naval task force. British naval blockade of the islands began at 4 am GMT yesterday but an

immediate clash appeared remote. Argentina withdrew its ships to home bases but continued to air-lift supplies to the Falklands.

● EEC ban of all Argentinian imports will be implemented after a brief round of talks in Brussels tomorrow. Japan warned Argentina that rela-

nuclear-powered submarines Peru's proposal

four British swiftsure class

troop withdrawal proposal, the

comment on reports that up to tine Foreign Ministry.

tions between the two countries could be adversely affected if troops were not withdrawn in accordance with the UN resolution.

• Peru requested Britain and Argentina to observe a 72-hour cooling-off period until Mr Haig's conciliatory mission ends. Argentina yesterday accepted the proposal.

 UN Secretary General Javier Perez de Cuellar flew back to New York yesterday after cutting short his European tour because of the crisis.

to replace the estimated 10,000 Argentina has also accepted Argentine troops on the islands. On the British side, Mrs are in the Falkland Islands parties to the Falklands dispute area to enforce the blockade. to accept a 72-hour "cooling-Thatcher has been insisting that all she will discuss is with-The U.S. Secretary of State of "period, which would allow drawal of A is expected to fly back to Buenos Aires today with the British reponse to the Argentine vian plan also involves the the islands. drawal of Argentine forces and was at the heart of the long then the start of diplomatic negotiations over the future of

The British line is that, at pply to it.

existence of which was last ing force drawn from Latin present, it is only prepared to it is consistently refusing to night confirmed by the Argen- American and other countries talk about implementing the

The plant makes radial tyres

Apart fro mthe fact that Hertz

another possible reason for buy-

ing the car rental company is

that Firestone has been develop-

ing a chain o automotive retail-the U.S. RCA's decision to sell Hertz

followed a sharp fall in the group's overall profits and a

steep rise in horrowings during

Continued on Back Page

a major buyer of tyres.

buses.

The British Government has ben insisting on an interim solution to diffuse the tension and has demanded that any question of sovereignty should

UN security council resolution

which demands that these steps should be carried out.

be proached only at a later However, inspite of these differences at noon yesterday some officials on the British side believed that a light had at last

appeared at the end of the tunnel.

Mr Haig telephoned Sr
Nicanor Costa Mendez the
Argentine Foreign Minister apparently to stress the British view that sovereignty could only be discussed later on and nicht the cabinet was meeting to talk over modifications to the proposals hich they had made to Mr

Haig, when he was in the Argentine capital. Among the ideas floated to help bridge the gap between the two sides is an Argentine suggestion that Argentine civilians should remain behind to administer the islading or share the administration with the

Falklanders. However, perhaps even more crucial has been the problem of building a linkage between the two "phases" of the problem-the withdrawal of Argentine forces and Britain's willingness to discuss future aragnements for the islands. It is details of the linkage, however informal which may be established between these two phases which discussion between Mr Haig and

Mrs Thatcher yesterday. To underline the strength of public feeling in Argentina over the Falklands issue, the authorities laid on the biggest demonstration seen in Argentina in recent decades outside the Plaza Casa Rosada, the Presidential Palace while the talks were going on inside on Saturday between Mr Haig and General Leopoldo Galtieri, the Argentine President.

In public, Argentine opinion presents a solid block behind General Galtieri in his refusal to code either control or sover-eignly over the island. Backing for use on heavy trucks and for the Government's intransigent position, has come from the entire political spectrum including the Communist Party. Privately though, some Argentines are growing weary of the insistent propaganda they are being hombarded with on radio and television and are prepared to tell foreign journalists they

> economic problems. To counter its virtual Continued on Back Page Invasion aftermath Page 3 Editorial Comment, Page 14

> believe General Galtieri is

simply trying to distract atten-

tion from Argentina's pressing

Commons to hear progress report

By Peter Riddell, Political Editor

PARLIAMENT has been re-called from the Easter recess to sit in emergency session tomorrow afternoon to hear report on the negotiations over the Falkland Islands.

The recall is at the reques of Mr Michael Foot, leader of the Opposition, and there is likely to be a three to four hour debate.

The Government is keen to keep the Commons fully informed to ensure that the broad unity among MPs of all parties is maintained and that the Labour Party is given no pretext to oppose.

Mrs Thatcher is, however likely to face close scrutiny and possible criticism from Tory Right-wingers who have been concerned that no con-cessions should be made to the Argentine and in particular that the British sovereignty must be restored to the islands.

Sir Bernard Braine and Mr Alan Clark have warned that they will oppose any deal which they regard as a "sell-out" of the islanders' position. This group could number

two or three dozen MPs.

Mrs Thatcher has limited her freedom of manocuvre by beink quite explicit about the restoration of sovercienty though Mr Francis Pym. the Foreign Secretary, has deliberately left himself a range of options.

There is quite a sizeable group of Tory MPs who have so far been mainly quiet but who will clearly be relieved if the dispute can be settled without the use of armed orce. These MPs are becoming increasingly apprehensive about a possible adverse public reaction if force has to be used and there are casual-

The latest opinion poll carried out by ORC for ITV's Weekend World programme shows that the vast majority of the public support the Government line at present.

The poli also shows that the crisis has not so far damaged the Government's popularity. The Conservatives are shown with 37 per cent of the vote, Labour with 35 per cent and the Social Democratic/ Liberal alliance with 28 per cent. A poll about ten days ago gave the parties roughly equal shares.

Firestone considers buying Hertz

BY RICHARD LAMBERT IN NEW YORK

FIRESTONE TIRE and Rubber, has been put at about \$750m debt represented 44 per cent of Tennessee to Bridgestone Tire, the second biggest U.S. tyre (£427.6m). The company has Firestone's equity, down from the leading Japanese manumaker, is contemplating a bid said that it expects that pre-tax 72 per cent two years earlier. facturer, for more than \$50m for the Hertz car rental busing profits this year will exceed. Tyres and related products The plant makes radial tyres. ness, a subsidiary of the RCA \$100m. This would represent Corporation. Firestone said that a very major diversification for exploratory talks have already taken place with RCA, which January had cash in its announced in January that sheet of about \$320m.

ing machines and technology to Clark Copy International Corp., management to which we would be attracted," Firestone said. But it warned that it was too early to say whether any offer would be forthcoming, and there have been reports that RCA is talking with other possible bidders.

Firestone which at the end of January had cash in its balance

Hertz Corporation was for saic.

Hertz, the U.S. market leader first quarter of this year fen to in car rentals, "is the kind of just \$2m, compared with \$76m in the same period a year business and has the kind of in the same period a year earlier. But the company said earlier. But the company said ficantly higher profits when the economy recovered. During the past few years it

has substantially strengthened its position by closing surplus ossible bidders. capacity and cutting its debt.

The asking price for Hertz At the end of last year, total

acount for more than four-fifths of Firestone's sales which totalled nearly \$4.4bn last year. Three-fifths of the tyre business is in North America.

creation of a mixed peace-keep-

Mr John Nevin, who as chairman and chief executive has been responsible for reshaping the company in the last two years, has made it clear that Firestone wanted to reduce its exposure to the Tyre industry. But until recently he has indicated that any major diversification was unlikely for another year or so.

Earlier this year, the com-

1981. Since Bendix announced last month that it had bought more than 5 per cent of RCA's shares there has been specula-tion that the whole company

pany agreed to sell a plant in

Palestinians stage protest strike

BY PATRICK COCKBURN IN JERUSALEM PALESTINIAN'S in the Israeli-

Sunday at the sacred Temple about a possible Israeli strike Mount in Jerusalem. Two people against Palestinian guerilla were killed and seven had been positions in southern Lebanon. injured when a gunman in Israeli Army uniform opened fire on guards at the Moslem More than 90 people were

reported injured in a series of clashes between demonstrators and Israeli security forces, which broke out yesterday. The latest violence erupted shortly before the White House

in Washington announced that President Reagan was sending Mr Walter Stoessel, Deputy Secretary of State, to Israel for urgent talks.

PALESTINIAN'S in the Israeli- A White House spokesman misal of three West Bank occupied West Bank and Gaza said the visit was aimed to mayors. staged a near-total strike yester- reduce tensions over Lebanon day in protest at the shooting on and reflected U.S. concern

> However, a State Department spokesman said later that Mr Stoessel's visit was aimed primarily at easing the remaining difficulties between Egypt and Israel before completion of the hand-over of Sinai to Egypt on army. April 25.

Meanwible, violent clashes were reported throughout the Israeli-occupied territories. The strike, which was called by appeared to have been more

The old city of Jerusalem was completely closed yesterday and there were occasional clashes between stone-throwers and Israeli patrols.

The Israeli Government is emphasising that the Temple Mount incident was the sole work of an unbalanced American immigrant, Alan Goodman, who was training in the Israeli

Moslem leaders contend that their traditional religious rights on the Temple Mount are now tensifying sectarian animosities. The Moslem religious authorities have called for the immediextensive than the one staged ate reopening to them of the

Labour urged to oust Militant

BY JOHN LLOYD, LABOUR EDITOR

from the unions to expel the they believe it has done, and Militant Tendency, and possibly will continue to do, to Labour's other groups seen as being of electoral chances. the extreme Left.

Three big unions with leaders in the Right and Centre will membership.
The list was abolished in the early 1970s. Motions to deplote

witch hunts," and calls for a consolidation of the gains made by the Left in the Party in recent years, will also be heard. The issue of the Militant Tendency, on which a Labour Party inquiry is expected to and report in June, threatens to union. be almost as divisive of the unions' political efforts as was the deputy leadership contest last year. This is likely to be the case whether or not the inquiry proscribes the group.

The thrust against the Ten-The thrust against the Ten- be present in the Party, with a their cases. however, dency is being directed by view to establishing whether demands for a return of t

THE LABOUR PARTY is to are prepared to see the group objectives, sources of finance come under increasing pressure expelled because of the damage and the links with political One left-wing member of the out in Clause 1I of the Constitution.'

TUC general council said at the weekend that he would support.

national committee meeting next week of the Amalgamated Union of Engineering Workers (AUEW)—led by right-wingers and Britain's second-largest Resolutions from three of its

27 divisions call for a re-incroduction of a list of proscribed organisations, while a fourth resolution calls for an investigation of organisations "known to some prominent left-wingers internal structure, their aims, objections to such a move.

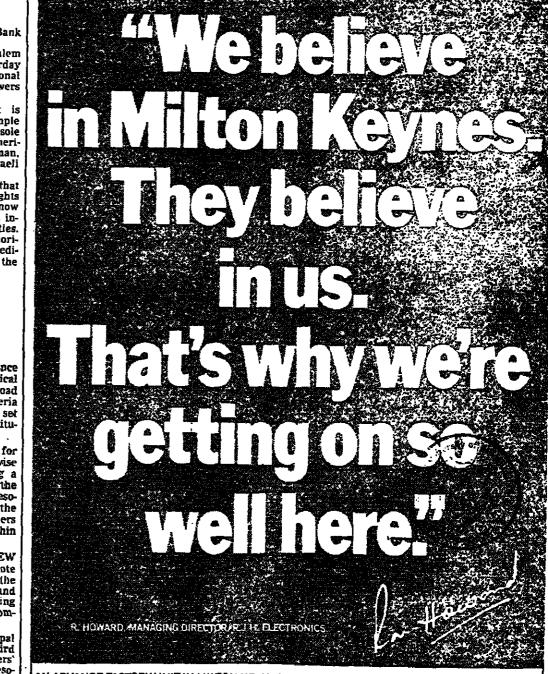
organisations situated abroad are consistent with the criteria for membership of the Party set

debate calls from members for the return of the "proscribed list"—a list of organisations disqualified from Labour Party membership.

Weekend the group if the an end to Party strue, ornerwise inquiry were to show it to be a "our chances of returning a separate organisation with his Labour Government in the own rules and funds—what he future are nil." Only one resonant membership. A further resolution calls for The most forthright calls for proscribed list, though others expulsion of groups on the fare support left-wing policies within left appear in resolutions to the

It is likely that the AUEW leadership will wish to promote the resolutions calling for the list to become union policy, and will rely on the large right-wing majority in the national committee to win the day. The General and Municipal

Workers' Union — the third largest — and the shopworkers' union Usdaw have similar resolutions on their agendas. In their cases, however, the demands for a return of the list unions led by right-wingers, but their own constitutions and are balanced, or outweighed by



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THE French Government's efforts to refurbish its public image in time for next year's key municipal elections have been given an embarrassing setback at the start by a clash with its own Socialist Party supporters in the National

Assembly. Friction arose over the postponement of a new penal bill, designed to replace a controversial reform introduced in the last days of the Giscard Administration. Party members were evidently not consulted about the change of agenda. Socialist deputies showed surprise and anger last week over the delay in bringing out the new provisions, which were to

have been approved at Wednes-

day's Cabinet meeting.

M Plerre Mauroy, the Prime
Minister, said that the Government would keep its word and repeal the Security and Liberty Act — generally known as the Peyrefitte Law — but that Peyrefitte Law, which came into security probelms required a effect last February, was "global" approach. He added attacked by the left and by a that a new text would be tabled large part of the legal profes-during the current parlia-sion as "repressive" and mentary session, ie before the

THE NARROW, winding streets Israeli

of the old city of Jerusalem, normally packed with pilgrims celebrating Easter and Passover,

were empty yesterday, apart from the occasional Israeli patrol

The Temple Mount area, above

whose walls can be seen the silver and gold dome of the

Al-Akasa mosque and the 1.260-year-old Dome of the Rock, was cordoned off by Israeli troops.

Workmen are trying to replace

the glass broken by bullets on

Unions prepare riposte to Renault

Both

last week.

tions during the week.

the

with the main union federa-

oriented CGT and its left-wing

rival, the CFDT, called on all

the plant's 18,000 workers to

turn up when the gates re-

open today after the Easter

The lay-offs were prompted by the outbreak of a fresh strike movement immediately

following the settlement of a

first, week-long pay dispute

The new strike involves

Communist-

FRENCH unions were last night preparing a risposte to the Renault car group after its decision to lay off almost 7,000 workers at its Flips factory, west of Paris, as a result of a pay strike, our Paris staff reports.

The dispute, which, after a prolonged conflict last autumn, brings the state-owned motor company back to the fore-front of the labour scene, overshadows a series of talks which M Pierre Mauroy, the Prime Minister, is to have

A special committee has been working since last summer on substitute legislation. The

"retrograde."

AFTERMATH OF ATTACK ON DOME OF THE ROCK

mosque with two magazines from
his M-16 sub-machine gun.
Even the Holy Sepulchre
Church, site of the crucifixion,
where normally a dozen different
Christian seets can be found were

Christian sects can be found, was largely empty. Ossasional bursts

of gunfire could be heard across the roofs of the city, as Israeli

patrols fired into the air to disperse demonstrators.

shops, selling everything from

Sunday when Alan Goodman, a groceries to some of the world's

All the hundreds of little

Its clauses included tougher recourse sentences, reinforced powers to magistrate. carry out identity checks, police custody of up to three days in certain cases instead of two. and - as part of an effort to speed up criminal procedures - wider powers for public proto bring suspects secutors to court without

Pilgrims desert Jerusalem as patrols move in

carts beside the city gates.

Jerusalem over the last week.

was a party of Germans dourly

picking its way over stones hurled at Israeli troops, apparently not heeding the

sporadic violence around them.

shooting is significant because

The strength of the reaction

Jerusalem to Sunday's

Israeli Army, sprayed the ally, Arab women, wearing long react to calls for political action mecca and Medina, just as the interior of the Dome of the Rock embroidered dresses, darted by the more militant Palestinian Waling Wall on the Western out to buy bread from a few leaders.

The only sign of the tens of the Rock, and the thousands of tourists and pilgrims, who have poured into

lay-offs as "worthy of the Giscard Government" M Jean-Louis Fournier, a CGT chief at the company's main Paris plant, said that Renault situation had since President Mitterrand's election last year.

250-300 workers according to the company, or 1,200 accord-

The dispute involves mainly

immigrant assembly - line

workers engaged on the Renault-5 and Renault-18

The CGT has attacked the

ing to the unions.

models.

to an examining While opposition deputies crowed over the Government's total incoherence. Raymond Formi. the National Asembly's Law Commission, attacked the "clumsy decision"

But the shooting in the Dome

outraged the more conservative

Many Jerusalem Arabs say

they see the attack as part of a campaign by extreme religious

or other protests.

the city is normally slow to the holiest shrine of Islam, after voke further violence.

maintaining the Peyrefitte Law, even temporarily, would do nothing to curb violence and that the authorities should not be influenced

M Robert Badinter, the Justice Minister, said that the postponement was "not an event," and that the new text should be put before the Cabinet by the end of this month.

The decision was taken

against a background of evidence that concern about security may have played a role in the Government's recent loss of popularity and its defeat in last month's cantonal elections. This concern has come to the fore with recent incidents such as the explosion which killed five passengers on the Paris-Toulouse express on March 29. Latest polls show that Presi-

dent Mitterrand and M Mauroy, while keeping a majority in their favour, lost sharply in popularity between late popularity between late February and late March, and that M Gaston Defferre, the Interior Minister who has been at the centre of a row with his attacked the "clumsy decision" top police hierarchy, plum-to postpone repeal. He said that meted 16 points to show a police officers.

Waling Wall on the Western

Mount area is sacred to the

Over the past few years

For the moment, the Israel

Government seems keen to keep

a relatively low profile, and

there has not yet been any

attempt forcibly

number of clashes over the right

Arabs in the city, previously of Jews to worship on the chary of involvement in strikes Temple mount itself.

Jews to take over all or part of attempt forcibly to reopen the Temple Mount area. This is shops on strike. This could pro-



"negative" opinion rating of 55 Following the death of a policeman on Thursday from a bullet wound inflicted two weeks earlier — the fourth to be murdered in less than a month — M Badinter was reported yesterday to have promised to press for heavy sentences for assaults against

M Pierre Mauroy: trying to halt popularity slide

Polish recovery

WASHINGTON - Poland's

Meanwhile, however, the imposition of martial law in Poland has compounded exist-

While Poland's policy during the 1970s of heavy

"Solidarity's political crisis which emerged in 1980 and 1981 was a result, not a cause, of Poland's economic problems," said Mr Henry Reuss, the committee chair-

man.
Poland imported large amounts of goods and equipment in the past decade to expand its industrial capacity and raise its standard of living, and paid for that growth with credit from Western governments and banks, the study said. The Polish Government

gambled that growth of exports would enable it to repay the debt to western hanks, but it was unexpectedly

new factories

Radio Solidarity, a new organisation apparently formed recently was planning to broadcast its first pro-gramme last night although some technicians doubted its

possible

washington — Poland's industrial capacity remains large and, if economic reforms and labour peace could be achieved, a study for the Joint Congressional Economic Committee said.

ing economic problems, according to the report.

industrial investment financed by hard currency borrowings has left it with massive foreign debts, it has also left it with a basis to rebuild its shattered economy," the report said.

The report said obtaining hard currency to buy Western goods will be the main diffi-culty in Poland's trade with the U.S. and other Western

After 1975, Poland was also hurt by mismanagement and bottlenecks in its opening of

Japanese unions likely to accept moderate rises

BY RICHARD C. HANSON IN TOKYO

JAPANESE unions are expected to accept moderate pay rises in the next few days as this year's wage battle comes

Public and private transportation were saved from striking today when union leaders of major private and public railway and bus companies agreed to wage increases worth just over 7.06 per cent last night. This year's settlements will

against depend largely on the outcome of negotiations by members of the powerful Council of Metalworkers' Unions — which include motor. steel, shipbuilding, and other metals and electrical machinery

The unions have tabled an initial demand for a 9 per cent increase in basic pay. Management, on the other hand, is offering rises of slightly over 7 per cent.

As indicated by last night's year-agreement, settlements are Ja generally expected to be reached near the latter figure. Unions' demands for higher increases have been undercut by a slowing in the economy and, year.

ironically, by lower rates of inflation this year. Last year the unions were able to secure an increase averaging 7.7 per cent. But this was still less than the rate of inflation, resulting in decline in real wages of about 0.1 per

Inflation this year, according to official projections, is ruaversus 7.8 per cent.

The final settlement will almost certainly leave the average worker in a large company with a real increase of about 2 per cent. Workers in smaller companies, however, which have been harder hit by the economic slump, will be hard-pressed to keep pace. Concessions by management

so far have been, to say the least, moderate. The electrical workers' union, for example, was forced to struggle hard to win just one more day off per

Japanese companies have argued strongly for modest settlements, citing the concessions being made by unions in the U.S. and West Germany this

Zimbabwe policeman killed in beer hall attack

BULAWAYO-A Zimbabwean remnants of former guerrilla police officer was killed and three other were wounded in a patrol in Bulawayo, the country's second city, officials disclosed yesterday.

At least two civilians were occurred in a suburban beer hall on Friday night. Several people have been arrested in connection with the incident. Five policemen went to the beer hall after a report of

trouble there, and the grenade was tosed in when they entered, a police spokesman said. There was no indication of the motive behind the attack, but dissident Reuter

groups are in the area. Mr Emmerson Munangagwa, weekend grenade attack on a head of state security, said recently that a number of people, including former guer-

rillas loyal to Mr. Joshua Nkomo, had been arrested in Matabelealso wounded in the blast which land province following the discovery of secret military training camps.

disappoited by their leader's defeat by Mr Robert Mugabe in Zimbabwe's independence elec-tion two years ago and it is thought some may have taken to

German N-protesters say 450,000 backed rallies

Germany's anti-nuclear moveplanned deployment of new a rally on Sunday. nuclear missiles in Europe.
Four days of peace rallies
ended last night with demon-

strations in Dortmund, West Berlin, Hanover and other cities which, the organisers said, drew about 120,000 pro-

despite poor weather which in-cluded snow, was halled as a major political success by a spokesman for the peace move-ment in Frankfurt, where the nationwide campaign was co-ordinated. "The message is that we shall not rest until the deployment of medium-range missiles is stopped," he said.

The organisers' attendance figures were challenged by

where yesterday's largest rally ment said yesterday that 450,000 was held, and in Frankfurt, people took part in Easter where the peace movement marches to protest against the claimed 60,000 participants in

> Frankfurt police said 20,000 organisers' estimates between 50,000 and 70,000 for the Dortmund protest were at least three times the figure issued by police. The demon-strators in Dortmund, a rallying point for marchers from the industrial Ruhr, were told by a former mayor of West Berlin. Herr Heinrich Albertz, that the peace movement was also gaining strength in the U.S.

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By Charles Smith, Far East Editor, in Tokyo

JAPAN yesterday warned Argentina that the two countries' economic relations "might be disturbed" if the crisis over the Falklands is

It also called for the early withdrawal of Argentine troops from the Falklands and urged the government in Buenos Aires to go along with American "good offices". The Japanese warning

which was conveyed to the which was conveyed to the Argentine Ambassador by Mr Yoshio Sakurauchi, the For-eign Minister, represents Japan's response to a British Japan's response to a British call for sanctions against Argentina. Roughly the same form of words as that used to the Ambassador is understood to have been included in a letter sent yesterday to Mrs Margaret Thatcher from Mr Zenko Suzuki, the Japanese Prime Minister, in reply to Mrs Thatcher's letter of last week. last week.

h-Haras

V Lamber

Japanese officials were at pains yesterday to emphasise that the Government had responded "nositively" to British demands for sauctions, and had not rejected them as earlier reported. Though officials were unable to say how soon relations with Argentina might he disturbed if the current situation continues, or in situation continues, or in what way the Japanese news agency Kyodo said Mr Suzuki had refused to impose economic sanctions against

against Argentina. In her letter last week Mrs Thatcher asked Japan to ban all imports from Argentina and to use "self-restraint" in the extension of commercial credit. The letter also asked Japan not to export arms but this is in any case banned under a Japanese Government code

Japan was quick to condemn Argentina's use of force in the Falklands, through its UN ambresseder, but has himted that it might also condemn the use of force by Britain.

The Japanese position on the Falklands crists is not related to the substance of the issues pending between the Argentine and the UK "—in other words, the Government keeps an open mind on the question, which side the islands actually belong to.

Japan exports to Argentina in the first 11 months of 1981 were worth \$749m, or about cent of its total exports, while imports came \$260m (0.2 per cent of the total). These figures rank Argentina well below Brazil and Mexico in the list of Japan's Latin American trading pariners. However, a series of recently secured plant contracts could make relationship more

important in future. contracts include a Y77bn rail electrification project won by Marubeni and Toshiba together with a share in the Yacireta power (in which West project (in which West Germany is also involved).

IT IS DIFFICULT to believe that the island fortress at the centre of a major international crisis was once a sleepy island community — a picture-postcard image of English village life complete with its bobbies, town hall and pubs.

But there is no over-estimating the transformation that has taken place in the Falkland Islands since the Argentine invasion 11 days ago.

With the deadline of the biockade falling due, the Argentine armed forces yesterday announced that they had completed the bulk of an operation they considered necessary to defend the islands from a defend the islands from a British attack.

For over a week military transport planes have been shuttling troops and equipment around the clock to the islands from the southern mainland bases of Comodoro Rivadavia and Rio Gallegos. So massive has the traffic to the islands been that the authorities have had to call up civilians who had completed national service to back up the professional reinforcements.

Amphibious craft and naval personnel that were used in the invasion have been reinforced by an impressive array of armaments and troops. Although exact details are censored by the military authorities, the build-up of the past few days is known to have included the transport of amoured personnel carriers, sophisticated radar selves. Foreign journalists have equipment and long-range guns and anti-aircraft guns.

been placed in coastal positions to read between the lines of on the islands and will presumably be used against the scattered eye-witness confes-British fleet, if and when it sions, and the comments of the enters the area. Meanwhile, few Argentine journalists who fighter planes now straddle Port have managed to report from



paration for any air attack. There are over 10,000 troops on the islands, compared to an

estimated 4,000 at the time of the invasion. The build-up followed the inauguration of the military governorship of General Mario Benjamin Menedez a man of few words but tough military tactics and a strong contrast with his predecessor, Mr Rex Hunt, the genial British colonial officer. whose principal activities used to be squash and kitchen

While festive pro-Government demonstrations take place among the Argentines and cold back-room diplomatic negotiations continue, it is perhaps easy to forget the human drama being lived by the islanders been banned from travelling to the islands since the invasion The long-range guns have took place. But it is possible

Stanley's only runway in pre-the occupied Faiklands a picture

of what life must be like.

Jimmy Burns in Buenos Aires surveys the islands in the eye of the storm

Falklanders resist Argentine blandishments

General Menendez said over the weekend that the islanders remained "distrustful" Argentine troops, but that is understating the fears of the 1,800 islanders. "The military build-up is now so great that any attack by British troops would provoke a bloodbath, in which many islanders would be killed," said Sr Jorge Bardot, a Spanish businessman, who was recently evacuated from the islands.

So great are the fears of the local population that the head of the Anglican Church in Argentina, has offered to go to the islands from Bueno Aires to contribute to "their serenity." He said over the weekend that he would be accompanied by members of the Anglo-Argentine community, who would make an effort to impress upon the islanders the good relations that have always existed between Britons and Argentines living on the mainland.

The hearts-and-minds campaign has, so far been spearheaded by the military authorities. Although they imposed severe restrictions on the movement of civilians immediately

Britain's naval blockade went into effect around the Falkland Islands yesterday but the possibility of any immediate clash between British and Argentine forces appeared remote. Britain said it would sink any Argentine warship within 200 miles of the islands.

after the invasion, these have now been lifted and significantly there is now no state of siege as has been enforced on the mainland since 1975.

Before the invasion newspapers in the Falklands used to carry regular reports about human rights violations in Buenos Aires. Clearly, though, the military authorities have maintained their kid-glove approach to the inhabitants in view of possible future moves at the negotiating table.

Equally subtly, the Argentines have moved to consolidate their hold on the islands by linking up the local radio with the mainland and introducing an Argentine-speaking tele-vision network. Islanders are reported to have been offered free television sets by the authorities and have been told that they can look forward to seeing Argentine coverage of World Cup football in June.

The national news agency. Telam, has set up offices in Port Stanley and now provides the only regular flow of news from the islands, since other Argentine journalists have had their visits restricted.

Argentine teachers have

arrived on the islands to replace English women who, before the invasion, used to travel to the more remote areas to supervise lessons with the families of sheep farmers.

The Argentines have also sem food and supplies to the islands during the past few days, as a precaution against the British blockade, and the Argentine peso has replaced the pound in commercial transactions. At least one Argentine bank, the Banco de la Nacion, is preparing to set up offices in Port nical talks in Brussels tomorrow. Stanley.

military authorities are facing a daunting task in their attempt to seduce a people whose British values are deeply entrenched and who are reported to regard the fact of the invasion as a challenge to their right to selfdetermination.

Argentine journalists, who were briefly allowed on the islands a few days after the invasion, were genuinely sur-prised to discover the cultural divide and that the kelpers still resented what Buenos Aires had presented as a "liberation."

One defiant interviewee told a baffled Argentine journalist that his name was Mickey Mouse and that the only thing he wanted to know was how soon the Argentine troops were going to get out.

In a more sombre mood, the local Roman Catholic bishop said that it was difficult to occept such a massive military presence, when the islanders had lived perfectly well for over a hundred years with little crime and less than four policemen.

Behind the islanders' defiance remains their one surviving link with Britain-the World Service of the BBC, which broadcasts daily messages of support from British officials and uncensored reports about the hectic diplomatic manoeuvring. UK's

EEC trade ban will follow talks in Brussels

BY GILES MERRITT IN BRUSSELS

THE EEC trade ban against Argentina, secured by Britain from its Community partners in a tough diplomatic tour de force over Easter, is expected to be implemented immediately following a brief round of tech-

The permanent representa-Despite their efforts, the tives to the EEC of the 10 memher states are due to meet then to put the finishing touches to the economic sanctions against Argentina that Britain requested a week ago and obtained in a Brussels diplomatic demarche of unprecedented speed.

The main purpose of the ambassadors' further meeting is to synchronise the national measures that the Community countries have agreed to take under Article 224 of the Treaty Rome.

The intensive consultations of April 9-10 in Brussels settled on that device, rather than on the more supernational blanket measures of Article 113 that ran into opposition from Den-

necessary that the member that they dovetail effectively. The permanent representatives are also expected to review the status of the European Commission's proposal of last week

Argentinian products should be denied preferential access to the EEC under the Generalised System of Preferences. But it is anticipated that such a move will now be dropped as being redundant following the total trade ban. The rapidity with which the

Argentine Ministry has called in Ambassadors from EEC countries to protest against the EEC ban on all imports from Argentina. Remer reports from Buenos Aires, Ministry said the Ambassadors had been told of Argentina's profound displeasure" over the ban.

agreed to freeze all EEC-Argentiman trade-worth some \$3.5bn (£1.9bn) a year — has been in marked contrast to the confused and dilatory fashion in which previous trade sanction demands, notably against the Soviet Union following the Afghanistan and Polish crises, have been treated.

It is thought that Breath will shortly attempt to harness this new political solidarity with further diplomatic miliatives againsi Argentina.

Reuter adds from Buenos Aires: Argentina has condemned the FEC ban on its imports it is, therefore, over the Falklands dispute as an act of grave hostility, and has announced that imports from states' own trade embargoes has announced that taiports from should be sentinised to ensure EEC countries will be subject to government approval on a case-by-case basis.

The EFC ban will strike a harsh blow at the Argentine economy, closing a market which has absorbed about one quarter of the country's exports. Most of Argentina's exports to the EEC consist of agricultural products, particularly meat and oilseed derivatives.

The EEC bought \$1.67bp worth of Argentine goods in 1980, out of Argentina's total Community partners exports of \$7.36hn in that year,

'Truth squad' to put Galtieri's case abroad

A GROUP of Argentine politicians has formed a "truth Christian Democratic Federa-squad" that will visit the U.S. tion leader, and Progressive squad" that will visit the U.S. and other countries to explain the position of General Leopoldo Galtierl's government in its conflict with Great Britain over the Falklands.

The politicians, representing several parties, told the private tions" in several countries,

Antonio Cafiero, Economics Minister under former Presi-Howard Baker and Edward borders Uruguay. Kennedy, the politicians said.

Sr Francisco Cerro, the Democrat Sr Rafael Martinez Raymonda are set to visit Italy and Spain, and Sr Italo Luder, a Peronist and former Senate President, is to travel to the U.S. and Spain.

 Brazil is sending a naval squadron on manoeuvres near its southern border in the next Argentine news agency Noticias its southern border in the next few days, but the move is not would talk with "influential friends and political organisacrisis, Navy Minister Sr Maximiano Fonseca has said. He told reporters at the week-

end that ships would leave dent Sra Isabel Peron, was due Brazil's main naval port in Rio to travel to the U.S. yesterday de Janeizo for the waters off to seek meetings with Senators Rio Grande do Sul state, which

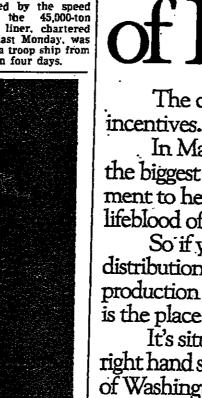
Spy ship drops back

as it sailed towards the Falklands.

A frigate-sized Soviet intelligence vessel dropped back over the horizon during the night, denying the 2,000 British troops on the Canberra a view of it.

A SOVIET ship continued to It is now believed to be about track the Canberra yesterday 12 miles astern. British officers think the

Russians cannot fail to have been impressed by the speed which the 45,000-ton luxury cruise liner, chartered by the Navy last Monday, was sent to sea as a troop ship from



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Telex

China and

U.S. sign

photocopy

agreement

By Tony Walker in Peking

China has agreed to pay \$5.5m to a small American

company for the supply of photocopying machines and

technology in a further sign

of its return to normal high

Agreement was staned at the week end by Clark Copy

International Corporation and

the China Import and Export Corporation for the shipment

of 1,000 photocopying machines by the U.S. company

and components for another

5,000 to be assembled at a

factory in Guilin, south China.

Under phase two of the agreement, the U.S. company

will assist the Chinese to

manufacture the machines at the rate of 200,000 a year for

domestic use and export.
Clark Copy International, a
small Chicago-based company,

beat off challenges from big

rivals like Xerox and IBM for the Chinese contract which

ness with the West.

BY ANTHONY MORETON, TEXTILES CORRESPONDENT

badly last year. Imports are estimated to have risen by 7 exports dropped by 16 per cent.

The figures show that British trade with the Common Market is growing. The amount of goods coming from the 10 EEC countries rose by 26 per cent compared with a rise of only 3 per cent in those originat-ing in low-cost Third-World

had an adverse balance of trade consequences of the recession during the year of £1.04hn, of and cut-back in the domestic which clothing accounted for industry come to the fore.

These figures, as the BTC Man-made fibres points out, have to be treated with some caution. Because of the long strike by civil servants last year there are still no official figures for imports covering the five months from April to August, and for experts from March to August. The Confederation has produced its 1931 totals by grossing-up, or annualising, the totals available.

It will probably be the middle of this year before the backleg of figures for 1981 is pub-lished. When the definitive totals became available, however, they are unlikely to be

radically different from those now produced by the BTC. The rise in imports last year followed a fall in 1980. What is particularly disturbing is that while there was a 7 per cent the rise over the whole year, the city.

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BRITAIN'S trade balance in growth in the last quarter was textiles and garments slipped 15 per cent. This one quarter increase.

> The reverse experience seems to have occurred in export markets. Although there was a big fall in exports-16 per cent -over the year the final quarter saw just a 1 per cent drop. Clothing exports managed to hold their own much better than teztiles and only ended the year slightly worse than in 1980.

The figures starkly hide some trends which will become more According to the British trends which will become more Textile Confederation the UK apparent in future years as the

The major part of the in-crease in imports from the EEC was in two areas - man-made fibres and carpets. The former was due in great measure to the reduction in UK capacity over the past two years and is unlikely to improve when the economy picks up. Britain is now much more dependent on overseas suppliers for its fibres than it was in the late 1970s.

The report also draws attention to the high level of imports of certain goods from certain countries, especially cotton yarn from Turkey and knitted underwear and dresses from South

The fall in exports was also due to a considerable extent to the fall in UK productive capa-

year, the Government has published figures showing significant shifts of importance among the country's invisibles ex-

The surpluses navicus, chalked up by the financial sector — banking, insurance, commodity trading, and so onremain buoyant. But the City's place as Britain's top exporter of services has come under serious chailenge from consultancy and construction com-panies winning an increasingly important share of the world's invisibles" market. Britain's balance of payments

ment of Britain's record £8bn

current account surplus last

has always been characterised by deficits in visible trade and surpluses in invisibles. Since 1816 there have been only seven annual visible surpluses and two deficits in invisibles. The normal pattern was dis-

torted last year.
A combination of buoyant exports, self-sufficiency in oil and a recession-induced slump in imports pushed the visible For the first time since 1967, surplus to a record figure prob- Britain had an overall deficit

ALMOST unnoticed amid the ably of close to £5bn. (The publicity surrounding announceexact figure is not yet available because of the effects on data collection of last year's Civil

> around £3.3bn, also seems likely to have been one of the largest ever registered. The improvement was due mainly to a sharp rise in the surplus in one of the three components of the invisibles account—interest profits and dividends, which were boosted partly by higher earnings on Britain's stock of overseas investments built up after the ending of exchange

> Of the other two components. the contribution from both the services sector and from transfers (both Government and private) were little

Within the services account -which is where Britain's in-visible exporters jostle for positions—there have, however, been important developments.

The travel industry as a whole no longer figures as a net earner of foreign exchange.

BRITAIN'S 'INVISIBLES' BALANCE OF PAYMENTS PRIVATE SECTOR SERVICES (Net figures, £m) Service dispute.) 1970
The surplus on invisibles, at Sea transport — 80 + 121 + 135 + 112 + 83 + 437 + 688 -- 745 + 208 +1.555 +1,799 +7.584 +439 +1,025 + 575 +2,587 +2.073 +2,767

> on the travel account, in 1981. • Financial services showed an increase in earnings of around 16 per cent, somewhat ahead £1.8bn, financial earnings are now only about two-thirds of the overall surplus from "other" services, where con-"other" services, where con-sultancy earnings in particular

David Marsh analyses Britain's traditionally strong 'invisibles' export sector

Profits overseas boost current account

have been holding up well. "Other" services comprise a myriad of often obscure sources of overseas invisibles earnings whose growing importance is often overlooked. Altogether, this sector contributed £2.8bn to the balance of payments last year, after £2.60n in 1980. Apart from overseas construc-tion and consultancy earnings,

this sector also includes receipts from overseas students and journalists (which has been increasing as a result of higher British student fees, and spending in the UK by foreign

The sectoral breakdown for

UN guidelines on

flags of convenience

1980 - full 1981 figures are

drawing up guidelines this week

to limit flags of convenience,

the foreign-registering of ships

which critics say disregards safety and labour laws and

barms Third World shipping

The 17-day meeting opening

today will seek agreements on

ncing and identification as

ship manning, management.

part of a future international

pact to ban what is known in the

trade as open registry shipping.

W. Germany DMbn

France FFr bi

It comes at a time of slump

for the shipping industry-about Reuter

Exports

Exports

World Economic Indicators

TRADE STATISTICS

Feb. '82

34.50

30.80 +3.60

18,704

2n. 782

4.410 -0.132

10,246 11,045

-0,799

51.54

58.59

industries.

Source: Central Statistical Office. Bank of England

not yet available — show Britain's overseas earnings from construction and consultancy together with research and development, at £1.2bn. were only slightly less than total earnings from financial services, which came to £1.6bn that year. Association of Consulting Engineers, which represents the 120 major engineering con-sultancies engaged in work

abroad, reports that its members' overseas fees last year rose to close to £490m from £425m in 1980 and £401m in 1979.

Association members are working on international engincering projects with a total capital value of £46bn. The Association says that consul-tants have benefited from British designers' high reputation, particularly among oil exporters and other big capital spenders in the developing

The oil states may provide a less rich source of income now that many Opec members are suffering a spending sultants point out that there are stall a lot of other countries to go round. British consultancy expertise was on show at a three-day conference in Bombay earlier this month, organised by the Committee on Invisible Exports to woo contracts from Indian business. UK consultancy cornings stand to benefit from the £380m package of orders for the Singraul power station and coal mine now under

industrial states profiting from

the freighters and tankers flying

flags of convenience are ex-

pected to opose any restrictions

The UN Conference on Trade

and Development (Unctad).

host to the talks, estimates 28

per cent of the world's shipping

tonnage sails under the flags of

Liberia. Panama, Singapore or

12 other states which allow

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Feb. '81

-3.746

Jan. '81

4.013

3317

9_306

10.712

-1.412

40.84

+0.696

foreigners to register ships.

Jan. '82

31.40

+1.10

18.737

-4.092

4.661 4.326

+0.335

12,020

+2.222

51.27

59.16

Dec. '81

will run for 20 years.

Mr Otto A. Clark, head of
the corporation, sold in
Peking that his machine was cheaper and more compact than models produced by one third of the world's supertankers are idle-and when

The American company is expecting to receive some \$60m payment over 3-5 years for components it supplies to China for the copying machines.

Ricoh reaches marketing deal

RICOH, the largest Japanese producer of pholocopiers, has surprisingly renewed its European markefing agree-ment with the U.S. company Nashua after a two-year split. The new agreement, which runs to 1990, is claimed to be worth £100m.

Ricoh claims to produce more copiers than any other company in the world, although by value Xerox sales are considerably higher. Until recently Ricoh products were sold in Europe by both Nashua and Kalle Infotech, a subsidiary of the German chemicals company Hoechst. Two years ago Ricoh

announced it would enter both markets directly and would not renew its contract with Nashua, which ran out in 1983. Faced with the prospect of losing its product Nashua tried to manufacture copiers itself and failed, the U.S. production line was closed about six weeks ago.

BSC wins £10m export order from Kaiser Steel BY ROBIN REEVES, WELSH CORRESPONDENT THE BRITISH STEEL COR- batite - a key element in drill-PORATION's strip products ing fluids. The barite is being

group has won a £10m export order to supply the U.S. Kaiser The contract, which could be

the first of a series is to be loaded at the BSC's Port Talbot works, South Wales where Kaiser's requirements, according to BSC, complement Port Talbot's product range exactly. Mr Peter Allen, a managing director operations, attributed the order to the improvement in Port Talbot's cost competi-tiveness, following BSC's "slim-

 KCA Minerals has won a \$13.5m (£7.5m) one-year conto provide Pemex, 115,000 tonnes of powered Kotoka Airport in Aocra.

line" redundancies two years

supplied from China where KCA has just completed a new Steel Comporation with 75,000 barite mill at Wuzhou in tonnes of steel slabs, for Guangxi Zhuang province in delivery by the end of the year. south-west China, built for the Chinese as part of a 10-year trading agreement with the China Nationals Metals and Minerals Import/Export Corporation (Minmet)

Rediffusion Radio Systems has won a £2.3m contract to supply communications systems to the Government of Ghana for the supply of civil aviation communications systems. The initial order, which was won in competitive tender, has since been extended.

The principal part of the order covers the supply of a comprehensive system for the Mexico's state oil company, with flight information centre at

Saudi financing for Italian project

mechanical and electric unit of isation plant

The loan is in two tranches. AP-DJ

MILAN-Franco Tosi, the each repayable in two years. The first, of SR 30m, will carry a the Pesenti group, has obtained fixed interest rate slightly a loan of SR 90m to finance below the Bahrain interbank the building of turbines for a rate for the first year and a thermoelectric plant at Al variable interest rate for the Jubail in Saudi Arabia, con- second year, The SR-60m second tranche will carry a variable interest linked to the three-

Shipping report

Poor outlook on productivity of bulk fleet

By Our Shipping Correspondent THE CRISIS in the Falkland Islands left shipping markets relatively unperturbed last week, but the overall state of the industry continues to cause

"The future looks bleak deed," said R. S. Pleatou, a indeed." leading Norwegian firm of shipbrokers, basing its pessimism on the amount of dry cargo tonnage shortly coming into opera-

In its comprehensive annual shipping review. Pleatou said: "We feel justified in asking whether the time has not now come to consider cancellation, or at least postponement of delivery, of the latest deliveries of bulk carriers on order.'

New ships scheduled for delivery this year represent around 9 per cent of the present bulk carrier fleet. The growth in combined oil and bulk carriers is expected to be slower, however, causing a rise of nearly 8 per cent in the total tonnage on the bulk markets.

The biggest expansion is expected in the Panamax fleet. comprising vessels of 60-80,000 deadweight tonnes which are the largest than can go through the Panama Canal. This sector per cent in 1982, Pleatou cal-

But transport requirements are unlikely to rise by anything like enough to use up all the available capacity, based on the likely state of the world economy. "This leaves us in considerable doubt as to the "This leaves us in future productivity of the bulk situation would be

changed by a congestion of tonnage such as that seen in Hamp-ton Roads on the U.S. east coast early in 1981 when ships were queuing up to take on coal. But Pleatou thought such a develop-

ment looked unlikely.
It concluded that the most important factor affecting international shipping this year would be the state of the world есопошу.

Mexico inaugurates its first Pacific oil port

The Mexican Government has officially inaugurated its first oil export port on the Pacific Coast at Salina Cruz, William Chislett writes from Mexico City.

The port, built at a cost of \$108.8m. has storage capacity for 2.5m barrels and can take tankers up to 250,000 dwt. Mexico has two other ports for oil exports, both in the Gulf. The new port will be mainly used for oil shipments to Japan which is viewed as a potentially the long term. At the moment Japan has contracted exports from Mexico for 140,000 b/d.

Oil is pumped over Isthmus of Tehuantepec to Salina Cruz from Mexico's major onshore and offshore fields.

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Local sites rejected for \$20m factory

By John Elliott, Industrial Editor A MILK products factory

costing \$20m (£11.4m) is heing planned in the Nether-lands by Bristol-Myers, a U.S. based pharmaceutical com-pany, which has rejected two sites in the UK.

But the company yesterday denied suggestions made by Mr Patrick Jenkin, Industry Secretary, that it had decided against the UK because its executives had been caught recently in Britain's train drivers' and airport baggage handlers' strikes.

Mr Jenkin met senior Bristol-Myers executives during a recent 10-day tour of the U.S. He said he also met at least seven American companies which were considering expanding their British plants. These companies were impressed by the UK's improved labour relations.

"But one company—Bristol-Myers-said that they were convinced by the combina-tion of the baggage handlers' and railway strikes that nothing has changed and they are going to Holland instead of building in Wrexham," said Mr Jenkin on his return.

'You can't keep Americans waiting for two hours for their luggage and then the

next day have no trains to take them where they're thinking of investing," he added.

Mr Leroy McBrien, a vice-president of the company in New York, who met Mr Jenkin yesterday denied that labour relations were a factor labour relations were a factor in the decision. He had told Mr Jenkin that strikes like the baggage handlers' dam-aged the international view of British labour relations, inspite of the overall improvements; but company executives had not been affected.

"It is ridiculous to say labour relations stopped us investing," be added.

The company's board would be recommended during the next two months to build in Holland. The UK has been very close to being a possibility," but had lost out because of a combination of factors including inflation forecasts, construction costs and availability of raw materials such as mlk.

In any case, Bristol-Myers,

which already has four production sites in the UK employing 700 people, is carrying out a £6m pharmacentical expansion project in Cramlington in the north-east. The other American companies which Mr Jenkin said were considering expanding in the UK included American Can, Pitney Bowes, Alcoa, Allegheny International which owns Wilkinson Match and Raytheon which owns Cossor. From California's · Silicon Valley area, Tandem Computers, which is expanding at

80 per cent annually and

Dysan, which makes com-

puter discs, were also consider-

Expansion for Mercantile House MERCANTILE House Hold-

ing UK expansion.

ings, the leading London money broking company that recently acquired Charles Fulton Holdings for £6.5m, is planning to expand its fund management activities into The group has set up a new

fund management subsidiary and taken on Mr Alan Maidment as one of its directors.

Mr Maidment announced early last month that he was resigning as managing director of the Britannia Group of Investment Companies, after 13 years with the former Slater Walker subsidiary.

Rolls-Royce wins Saudi contract

Rolls-Royce has been awarded the contract to equip an over-haul base for RB-211 engines, being set up in Saudi Arabia at a cost of £25m by Sandia. The Saudi national airline

is the largest operator in the Middle East of RB-211-equipped Boeing 747 and Lockheed TriStar passenger jets, of which it has a total of 19. Rolls-Royce is also to carry out initial training of Saudi staff at the base.

Enterprise zones rates revision

BUSINESSES just outside new enterprise zones may qualify for a rates revision if they can show that creation of the zones constitutes a 'change in locality," says Mr Nicholas Ridley, Treasury Mindster.

CEGB plea on coal imports hits a sore point

BY MARTIN DICKSON, ENERGY CORRESPONDENT

THE Central Electricity Generating Board (CEGB) has told the Government it wants to increase substantially its coal imports this year—a move which could provoke conflict with the mining

The CEGB's plan poses a dilemma for the Government. It must decide whether to allow the increased imports or to renew an agreement reached last year under which the board irreducable minimum."

The agreement kept CEGB imports to 750,000 tonnes in 1981-82 instead of the 2m tonnes planned. It formed part of a coal industry rescue package, assembled by the Government in February when it was threatened with a miners' strike

received financial compensation until 1983 to buy 2m tonnes a good price if it tried to sell the portion of the 75-80m tonnes of tional security of supply.

The supply of the control of of last year's import restrictions,

Because the international coal over pit closures.

market is weak and supplies level will be."

The CEGB is under contract plentiful, it would not obtain a Imports repr

Rotterdam where it now has about 1.5m tonnes.

With an additional 2m tonnes coming this year, the board success at increases imports.

But the CEGB has been at Thames power stations.

But the CEGB has been athough not inland. The CEGB anxious to maintain a toehold anxious to maintain a toehold anxious to maintain a toehold athough not inland. The CEGB could be anxious to maintain a toehold anxious to maintain a toehold athough not inland. The CEGB anxious when the Government tended to go on importing to demanded import cuts last year.

Because the interpositional could be a price edge over NCB supplies at Thames power stations. But the CEGB has been athough not inland. The CEGB anxious to maintain a toehold anxious to maintain a toehold athough not inland. The CEGB argues that import tended to go on importing to be a price edge over NCB supplies at Thames power stations. But the CEGB has been athough not inland. The CEGB anxious to maintain a toehold anxious to maintain a toehold anxious to maintain a toehold athough not inland. The CEGB argues that import tended to go on importing to be a price edge over NCB supplies at the CEGB has been athough not inland. The CEGB argues that import tended to go on importing to be a price edge over NCB supplies at the National Coal Board.

The CEGB has been at though not inland. The CEGB argues that import tended to go on importing to be a price edge over NCB supplies at the CEGB has been at though not inland. The CEGB argues that in the world market. It was the complete tended to go on importing the problem. is no decision yet on what the

competition, however limited. The Government's limitation helps it to hold down the NCB's on imports came in for sharp prices and also gives it addi- attack last month from the

During the past few years, At least 75m tonnes comes from imported coal has generally had a price edge over NCB supplies

The Government's limitation

Commons Select Committee on Energy, which said: "The interests of the consumer and taxpayer were not uppermost in the minds of ministers when they reached their decision."

However, any move to incresse coal imports will be attacked by the National Union Mineworkers ... which ... will regard it as a threat to British

NCB faces multi-million tonne problem in Scotland

MR BILL SWIFT has a multi-sales to the South of Scotland militon tomne weight on his Electricity Board (SSEB).

As marketing director of the National Coal Board (NCB) in Scotland, he faces the difficult task of selling 8m-9m tonnes of coal this year—at a time when the market for the fuel has shrunk dramatically.

Throughout the UK, the NCB's markets have been hit by the recession. But Scotland is suffering more than many of the other 11 areas into which the NCB divides the country. There's no doubt we have a major marketing problem for the next few years," says Mr Swift. A blow fell on New Year's Eve when British Aluminium closed its smelter at Invergordon, in the Highlands, because of the high cost of

That means lower demand for electricity—and therefore lower demand also for coal to burn m power stations. Unless Invergordon opens again—and a rescue package now appears drive for alternative markets—unlikely—the NCB will lose particularly abroad. During the about 750,000 tonnes a year in past year, Scotland has ex-

this summer when Peterhead power station starts to burn natural gas liquids (NGLs) from the North Sea. Peterhead has in the past run on oil, making it more expensive to use than Scotland's three coal-fired

But in the interests of energy conservation, Peterhead is to use NGLs which would otherwise be wasted for the next three to four years, until the large petrochemicals complex being built at Mossmoran, in Fife, is ready to use the NGLs as a feedstock. The liquids are expected to replace more than 1m tonnes of power station coal a year until Mossmoran comes on stream in 1985/86.

SSEB likely to fall from 7.5m-8m tonnes a year to 5m-5.5m tonnes over the next few years, the NCB is undertaking a major drive for alternative markets-

COAL IN SCOTLAND

ported its first coal for a Despite the export drive, the NCB will probably have to put

Big losses must in turn put increased pressure on the NCB to shut down its most unprofitable, elderly capacity.

stock over the coming year, increasing the costs of what is

already one of its heaviest-loss-

Martin Dickson

explains why stockpiles are likely to mount for several years

cal conditions mean that Scotland's pits have been in decline for years. During the past five years, production from deep more than 1m tonnes of coal to mines has dropped from over 8.5m tonnes to 7.15m tonnes in 1981/82. Eight pits have closed, leaving 14 in production, and manpower has dropped from 22,100 in 1976/77 to 17,500 now. But the idea is to stabilise

To stop the decline, the NCB is spending £105m on the modernisation of Scottish pits, three of which are closed for Lack of port capacity makes major development work. This it hard to export more at programme, combined with the closure of exhausted old pits, has led to a 3-4 per cent rise in productivity over the past

The investment programme is modest compared with those the NCB is undertaking in other parts of the UK. But local NOB officials hope it will change a deep-mining operating loss of £29m in 1980-81 to break-even by the mid-1980s.

However, as Mr John Loudon, the area's deputy director admits: "Much of that expectation depends on markets and prices over the next few years."

So what are Scotland's sales prospects in the 1980s? On the export side, the NCB has managed to ship out 500,000 tonnes taxpayer in aid to the NCB.

capacity of 2.5-3m tonnes, will over the past year through the give Scotland a total output of 9.5-10m tonnes.

over the past year through the port of Leith, mainly for the Scandinavian market. A further 500,000 tonnes a year is going out through Ayr to Northern Ireland.

Lack of port capacity makes present. But the NCB has held lengthy discussions with British Steel on the possible use of year, and a similar improvement the corporation's Hunterston is expected in 1982/83.

The NCB would have to spend some £3m to turn Hunterston into an export terminal, but it about 1.5m tonnes a year through the port in vessels of very large tonnage — provided it could sell that much.

However, last year's shortage of global coal supplies has turned into a glut. It is questionable whether the NCB will reach its target.

Against this background, Scotland's coal stockpiles look like mounting for several years to come, posing either a threat to jobs or a substantial cost to the

Solid fuel prices cut

EASTER MONDAY was cut-price-coal day for house-holders throughout the UR. Until July 31, supplies of solid fuel from the National Coal Board (NCB) and its subsidiary National Smoke-less Fuels to coal merchants are reduced in price.

There is \$5 a tonne off house coal and authracite stovesse and stove muts, £7 at tonne off all other domestic grades of anthracite, Weish dry steam coals, sunbrite and homefire, and £8 a tenne off phurnacite and firegle.

NCB chairman, Sir Derek Ezra, said: "Householders stand to gain substantially by ordering their coal now. With these reductions, and the industry's successful efforts to dustry's successful energy to keep the last price increase well below the level of in-flation, coal is now a parti-cularly good buy."

Coal merchanis reduce their retail prices in the early sum-mer to help householders to save money by stocking up for the following winter.

Glossy draw

of mail order

WOMEN'S clothing and personal

products, such as jewellery,

dominate the response to mail-

order advertising in the nine

Clipper, a research service launched this month by Market-

ing Direction, a marketing and

research consultancy, says these

two types of product accounted

for 37 per cent of all direct-

response, mail-order advertising

in the five Sunday colour sup-

Barclaycard

adverts

By Belinda Nenk

months to March.

plements and

magazine.

Clothing

Cap and gown-and underpants

By Anthony Moreton, Textiles

AN UNLIKELY alliance has just been made between one of Britain's leading manufacturers of men's underpants and one of its oldest universities.

The object: to produce better and cheaper underpants and more comfort for men, and to repulse cheap foreign under-wear and provide more work The link is between Lyle and

Scott, maker of the renowned Jockey and Y-Front brands, and Durham University. The company, part of the Courtaulds group, has put up £105,000 over three years. This has been augmented by another £75,000 provided by the university from a Science Research Council

Research The research programme will

investigate ways in which cobotics could help maintain profits in a highly competitive market. Lyle and Scott hopes that the results will revolution-ise automation in the needle trades, not only in its own Dunfermline, Carnoustie and Gateshead plants but throughout the

the garment industry. Lyle and Scott is heavily dependent on women workers and traditionally faces a high staff turnover which averages at around a third of all machinists each year.

Mr John Russell, managing director of the company's Jockey division, states that it is looking for ways of ensuring that training costs are not dissipated in staff turnover. Robotics could provide the answer, he believes.

Training

By enabling skills to be built into machines, workers could be cheaply trained in several Mr Russell foresees considerable savings in training times as well as improved

"Robotics could enable us to be in business and prospering in 10 years' time. The majority of the textile industry is vulnerable to low-cost imports and new technology could help home producers to remain competitive."

Lyle and Scott has already had considerable success with new machinery. At Gateshead a metering device for elastic waistbands ensure that sizing remains uniform throughout the production line.

Using micro-chip technology the device enables workers to turn out goods faster and more accurately, improves productivity and allows higher wages.

Old pits and difficult geologi-Colleges and industry forge research links

BY DAVID FISHLOCK, SCIENCE EDITOR

GOVERNMENT initiative in potential. encouraging British universities and industry to collaborate more closely in exploiting genetic engineering, is already claiming at UCL. tangible success.

and a third involving a consor-The Government's Science and Engineering Research Council

set up a biotechnology directorate to help such work. The directorate expects to spend \$2.5m over the next five years in encouraging links between universities and industry. Rath the industry believe this is more

likely to advance national interests in bio-technology than the creation of 20 or more university posts, as the Government's scientific advisers recommended in the Spinks Report in University College, London,

has won a contract worth about £140,000 from a U.S. company to develop a production process for a powerful new pain-killer, called pancreatic endorphin. The endorphins are natural proteins, which act like morphine, but are free from the addictive side-effects. Pancreatic endorphin brain after intravenous injec-

Endorphin Inc, a Seattle company, placed the contract with the Department of Blochemistry

Imperial College, London, and Two collaborations have just Technical Development Capital been announced in London, (TDC), the high technology arm of Finance for Industry, have tium of large British companies formed a company. Imperial is at an advanced stage of Biotechnology, to market con-planning in Leicester. Biotechnology, to market con-tract research and new-process manufacture at the pilot fermentation plant of the college's department of chemistry. The company has announced

its first commercial contract, to make a range of biologically active agents for genetic engineering research, for sale by Cambridge Biotechnology Labo ratories, a subsidiary of V. A. Howe and Co. TDC is making an initial investment of £400,000 in the ven-

ture, which is estimated to be costing £250,000 a year to operate. Equal shares in the equity of Imperial Biotechnology will be held by Imperial College and

The most far-reaching instiative so far is still being worked out between the Department of Biosciences at Leicester University and a consortium of major, non-competing British companies. They hope to set believed to be able to reach the up a national bio-centre at Leicester University to tackle gaps tion, and could thus prove to in the national armoury of key commercial technologies.

7m tonnes a year. This, together with profitable open-cast mining Carbodies' farm truck

deep-mined production at about

conversion

makers, is entering the agricultural market in the autumn with converted Range Rover designed to meet demand for a fast, lightweight vehicle for spraying, pesticide and other

CARBODIES, the London cab-

Financial Times Reporter

Coventry

The Coventry company has spare capacities for up to 100 other vehicles a week. The Unitruck uses the front of a Range Rover with a crew cabin, behind which is a pickup body

An impervious barrier isolates the passenger compart-ment and allows agro-chemicals to be carried. Provision is also made for attaching equipment. Up to threefold increases in productivity over conventional tractor operations is claimed.

Attachments

The £13,500-£14,000 Unitruck is roughly equivalent to the Fleetline Range Rover in specifications. With sprayer attachment the price is expected to be

The Grant Lockhart, managing director of Carbodies. said the company had an application before customs and excise to relieve the Unitruck of car tax, which is about £1.000. With VAT, this amounts to some £3,000 for the whole vehicle."

Legislation

"We are overhung with legis-

and head of a Dorset agriculturnel company that made the to run over 20,000 acres of cereals once a month. That took seeking British manufacturers idea was the brainchild of the for 600 of their products cur- London Enterprise Agency.

Upturn expected in engineering sales

dustry, which has strengthened its profits by cutting its costs, is expected to enter what Laing & Cruikshank, the London stockbrokers, sees as a second stage of recovery by increasing its volume of sales. In a quarterly review of the

engineering and motor sector, it suggests that capital spending on plant and machinery, after reaching its lowest point in the third quarter of this year, will recover. By the first quarter of 1983 it should be about 4 per cent higher than the 1981 average and possibly 14 per cent higher than the lowest point in

stocking, a further 4 per cent demand is expected in 1983.

THE British engineering in fall in numbers employed, and a 7 per cent rise in sales prices. it expects margins to improve from 2 to 5 per cent during 1983. Also in 1983 the upturn in capital investment and recovery in overseas markets

should permit a volume increase

of 6 per cent.

However, the growing reces sion in South Africa means that companies which have relied heavily on trade there will see profits cut. Other UK engineering companies will be hit badly by their involvement in the U.S. motor industry, which slumped in January. Although most UK companies

in the machine-tool industry are Assuming a 4 per cent volume there are signs that the worst is increase in 1932, due to re- over and a marked upturn in

kitchen, dining and personal products fetching more than 22m each. In terms of overall direct response expenditure, the Sun-

Women's clothing attracted

day Express Magazine is getting the greatest revenue (32 per cent), followed by the Sunday Times Magazine (22 per cent) and the Sunday Telegraph Magazine (19 per cent). The News of the World's SunDay magazine is struggling to penetrate the market, with only 11 per cent of all revenue. Clipper appears to dismiss the idea that a better response

to mail-order advertisements is achieved by taking right-hand During 1981, 7.5bn coupons were distributed in Britain. according to Nielsen Clearing

House, the coupon-handling company. A 60 per cent increase on the total in 1980 largely resulted froc. retailers' distribution of coupons, previously used almost exclusively by manufacturers.

Coupons

Consumers redeemed 324m coupons, valued at £23m, in redeemed were distributed in this way in 1981, compared to

More exhibitions planned

planned for later this year aimed at encouraging British companies to pick up orders for products currently imported into the UK.

The news follows the over-

whelming response to the "Can You Make It?" exhibition which opens at the Confederation of headquarters tomorrow. At the exhibition about 50

MORE exhibitions are being rently being imported from overseas producers. These products, which represent orders worth floom a year, will be on display at Centre Point, and more than 2,000 mainly smaller businesses have now made firm

bookings to attend. To satisfy demand, the organ-isers have decided that the ex-British Industry's Centre Point hibition, which was due to end on Thursday evening, will stay open on Friday morning. The "Can You Make It?"

lation from the horse and cart age and if we are to combat Japanese pickup imports and build up UK exports we need more up to date thinking," he

Mr Michael Pearce, a farmer

Demand for new homes up

A MARKED upturn in confid-ence is taking place among per cent three months ago. house buyers with an upsurge An indication that house in demand for new housing, according to the House Builders' Federation. It says that a quarterly survey

of 273 housebuilders carried out in the wake of the Budget shows an improvement in all sectors Mr Roger Humber, the Federation's director, said the inquiry showed "that 1982 will

be an excellent year for house-

buyers.' Some 57 per cent of companies reported an increase in 14 jobs go at interest by first-home buyers, Rolfact and the parish and the panies reported an increase in the panies reported and increase in the panies r with only 7 per cent reporting a fall. Existing owner-occupier interest improved for 58 per cent of companies, while only 11 per cent experienced a de-

Both results compared favourably with the last quarter of 1981 when only 10 per cent of builders reported an improvement over the previous quarter, says the federation.

Expectations of future sales are consequently high, with more than half (57 per cent) planning increased starts in

gins to be maintained or improved in 1982. Employment on building sites also expected to increase according to 51 per cent of companies; 21 per cent said they anticipated an increase of

at least 10 per cent.

An indication that house

prices have stabilised, after

their recent decline, is reflected in the 59 per cent of

builders expecting profit mar-

Belfast airport Increased charges at Belfast airport have forced British Midland Airways to cut 14 jobs — most of the ground staff in Northern Ireland.

airport charges there as among the highest in Europe. The Association of Profes-sional Executive Clerical and Computer Staff (APEX) has demanded an investigation into the cause of the staff cuts, claiming his union had

British Midland has labelled

1981. This was 30 per cent more than in 1980, the company said. Consumers seem to prefer coupons they have taken from a pack. But more people are using coupons delivered to the door, often by the Post Office's household delivery service. Fifteen per cent of all coupons

New broom makes a sweeping start at Guinness

Gareth Griffiths looks at Mr Ernest Saunders's progress

MR ERNEST SAUNDERS, the group managing director of Arthur Guinness, marked the start of his second six months at the company by selling most of the Guinness holiday interests to English China Clays PLC for what the City considered the good price of £13.2m.

It was the third such sale that Mr Saunders had completed within a month. It was also part of his effort to revitalise the brewing company, which became involved, during the 1960s and 1970s, in such ectivities as film finance, plastics, holidays, and leisure goods, as well as the traditional brewing of stout. Guinness made pretax profits of £41.8m on a turnover of £905.6m for the year ended September 26, 1981.

business, was sold in January to Grampian Holdings for £1m. The £20m-plus raised by the four sales will be used to reduce 1982-3 and to create greater

flexibility in financing. But Guinness argues that as much importance should be attached to the fact that the company at last was seen to be acting, In the past six months, Guinness has been subject to a series of management reviews initiated by Mr Saunders. He asks two fundamental questions of each of the companies in the group: What is the long-term potential of the business? What can the company do to be more

but difficult, questions that the Guinness family brought in Mr Guinness family brought in Mar Saunders six months ago as a new broom. He had been on After three months, when aimed at returning to its more Nestle's central management Guinness decided that the traditional brewing role, committee in Switzerland and advertising of stout, was too Having got out of confections meteoric career in intersophisticated for its consumers, tionery and the risk side of and when research showed that film finance, the company is national management gave him.

analysis. The share price rose from 53p on October 1 to 82p The new broom was sweeping four main fronts. Meeting as many people in the UK, Ireland and continental operations as possible so as to get a feel for the business. Mr and often are unaware of others'

and the activity impressed City

ing rather than the brand.

brewing, but Guinness management traditionally has been rather old-fashioned in its approach. Many managers spend entire careers with the company

ment reviews, each conducted marketing have left the by a project development team. company.

The decision to end Guinness's Retrenchment—and disposal advertising account with J. of companies that no longer fit Walter Thompson was taken Guinness's overall strategy

not been consulted.

plastics interests. It says parts of the plastics and materials been concentrated in two 1981, plants, instead of three, and The expanded its share of the

Guinness still has serious

tied estate base and so is in a difficult position when bargaining with other brewers over trade discounts. Guinness, it is believed, now intends to reduce the credit period

Guinness's stout often costs considerably more in brewers' managed houses than premium

bitters. Profits in Ireland have come under strain because of in-creased taxation there on beer and the Irish punt's decline against sterling. This is especially important because the Irish subsidiaries' contributed 62 per

The review of brewing will Clares, a company that manu- be completed towards the end factures and supplies super- of the next six months and is market shopping baskets, has almost certain to call for inproved productivity. Park Royal, the main Guinness mant in west London, lags behind similarproblems. The mainstay of its sized plants in output per em-traditional business, stout, only ployee. Also, the overseas com-Company for 14m on March 15. emaint?

Company reporting system to smit with property be more traditional dusiness, stout, only ployee. Also, the overseas company reporting system to smit with property be more traditional dusiness, stout, only ployee. Also, the overseas company for 14m on the property be more traditional dusiness, stout, only ployee. Also, the overseas company is first to smit with first thing for 45 per cent of the panies will be subject to aspects of the company. So far UK beer market and Guinness scrutiny. Mr Saunders will start two senior executives associated drinkers are an ageing breed. Also, the overseas company is more traditional dusiness, stout, only ployee. Also, the overseas company is more traditional dusiness, stout, only ployee. Also, the overseas company is more traditional dusiness, stout, only ployee. Also, the overseas company is more traditional dusiness, stout, only ployee. Also, the overseas company is more traditional dusiness, stout, only ployee. Also, the overseas company is more traditional dusiness, stout, only ployee. Also, the overseas company is more traditional dusiness, stout, only ployee. Also, the overseas company is more traditional dusiness, stout, only ployee. Also, the overseas company is more traditional dusiness, stout, only ployee. Also, the overseas company is more traditional dusiness, stout, only ployee. Also, the overseas company is more traditional dusiness, stout, only ployee. Also, the overseas company is more traditional dusiness, stout, only ployee. Also, the overseas company is more traditional dusiness, stout, only ployee. Also, the overseas company is more traditional dusiness, stout, only ployee. Also, the overseas company is more traditional dusiness, stout, only ployee. Also, the overseas company is more traditional dusiness, stout, only ployee. Also, the overseas company is more traditional dusiness, stout, only ployee. Also, the overseas company is more traditional dusiness, and the overseas company is more traditional dusiness.



Viking Resources international N.V.

Curação, Netherlands Antilles

in the Annual General Meeting of Shareholders held on 8th April, 1982 a cash dividend of USS 0.43 per ordinary share was declared payable as from 20th April, 1982 on the ordinary shares against delivery of dividend coupon nr. 10 with

Pierson, Heldring & Pierson N.V. Herengracht214 Amsterdam

Guinness disposed of Callard and Bowser, its loss-making confectionery subsidiary, to the Chicago-based Beatrice Foods Company for £4m on March 15.

ton and Dudley for more than of other companies.

E2m. The Guinness Veterinary It was to ask these obvious, group, an animal medicines

rather than talking about it. efficient?

which Guinness operated. His first six months were busy

Saunders also set up a simplified methods and approaches. This company reporting system to shift will probably be more

 A change in emphasis of management style — towards handling division are very subsidiaries' contributed 62 per marketing, rather than produc- dynamic. Moulding work has cent of trading profits in 1980tion. This change has been common in the rest of British

market.

Petrochemical plant threatened in tax wrangle

BY SUE CAMERON, CHEMICALS CORRESPONDENT

North Sea petrochemical raw Revenue to accept in-house materials—and fears that the company may shut one of its as long as it were satisfied that plants, at Grangemouth in Scotland, are growing.

3 Cut

NDAY was on the bid of the bid of

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Han, Sir Den Householder Substantiality

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 $\tau = 0, \quad t(\tau)$

 $\mu(q)=0.28$

BP Chemicals has made it clear to Ministers that the 250,000 tonnes - a - year petro-chemical plant will be viable only if it can be converted to use North Sea ethane gas as a raw material, as well as oil-based naphtha. But a £25m project for conversion would not be economic unless the com-pany were to obtain tax concessions on the ethane gas from the Government.

The Finance Bill that followed the Budget evidently makes no provision for a tax deal with the company — although BP Chemicals said at the week-end its experts were still studying the relevant clauses.

What the Bill would do however, is to formalise a secret tax of the secret deal between Esso agreement made by the Government last year with Shell and last year. Esso—two of BP Chemicals' BP Chemicals' problem is that main rivals. Shell and Esso are building a £500m petrochemical plant, at Mossmorran in Fife. which has been designed to use ethane gas from their Brent field as raw material. Last year Esso Chemical wrung a special tax deal for the gas from the Government after threatening to abandon the Mossmorran

North Sea ethane is subject to the usual 70 per cent is suffering massive over-Petroleum Revenue Tax, which capacity in basic petrois to go up to 75 per cent at the chemicals, so the alternative to

Start of next year.

Shell and Esso will be using closure — particularly as the their Brent ethane at Mossmorran and will be able to agree ing been built in 1968.

THE Government appears to a comparatively-low, in-house be ignoring BP Chemicals' transfer price. The Finance demands for tax concessions on Bill would require the Inland they are comparable to prices that would have been agreed by

unassociated companies. This would effectively give Shell and Esso a free hand because there are no such comparable contracts for the sale of ethane as a pretrochemical raw material in the UK.

The Finance Bill also proethane transfer price is agreed between the companies and the Inland Revenue, it shall be bind-ing, for tax purposes, for five years after the first delivery of the gas. At present, the Inland Revenue has powers to revise every few months the price it will accept for tax purposes.

The introduction of the new five-year rule is understood to have been one of the main parts. Chemical and the Government

it has little ethane gas of its own. It would have to buy ethane to go ahead with conplant, and it could find itself paying tax at a much higher rate than Shell and Esso.

certainly would make BP's planned conversion of the The UK, like the rest of Europa,

cause permanent disruption if

Ministers -

pledged support for the com-

pany's fight to prevent its

ally similar to pure alcohol distilled from wine—is made

from petrochemical raw materials and used in the manufacture of tolletries, cosmetics, industrial solvents

and other products.

The current price of synthetic alcohol is about £500 a

tonne. But Mr David Crouch, MP for Canterbury, said in a

recent House, of Commons debate on agriculture that the subsidised cost of distilling surplus EEC wine for the syn-

thetic alcohol market would be "nearly £2,000 a tonne." The safegaurds in the latest agreement on exceptional dis-

the European Commission when they plan to sell dis-tilled wine alcohol, and give

details of price and volume. The Commission will inform other member states and decide whether the proposed

sale will disturb the synthetic

If disruption seems likely, the commission can either halt the sale or demand

changes in planned price or

volume.

Prices have been set at 81.5 per cent of the EEC guide price under the exceptional

distillation agreement. The present market price for wine

alcohol market

the guide price.

tillation of wine are: • Member States must tell

being jeopardised.

it were sold into the synthetic alcohol market at subsidised prices, as the EEC is pro-

BP Chemicals has doubts on EEC wine agreement

BY OUR CHEMICALS CORRESPONDENT produced on this basis could

CHEMICALS has safeguards designed to pro-tect its synthetic alcohol business which have been written into a new EEC agreement on

The EEC has agreed to an "exceptional" distillation into pure alcohol of 6.5m hectosurplus. The cost of the exceptional distillation, in terms of EEC subsidies, has been estimated at £70m. But. at the insistence of Britain, the agreement includes guarantees almed at prevent-ing the distilled wine alcohol being sold into the comparafively low-priced synthetic alcohol-market

BP Chemicals is Western Europe's biggest producer of synthetic alcohol and has just completed a 257m synthetic alcohol plant at its Grangementh complex in Scotland. The company said at the weekend that the wine distillation agreement "goes some way to safeguarding the interests of the synthetic alcohol in-

But it had "some doubts on whether the safeguards are sufficiently strong." It warned the agreement itself could lead to further over-production of wine in Europe —particularly while the inter-vention price set for excep-tional distillation was so high BP Chemicals is thought to be less worried about the latest, one-off agreement on wine distillation than about

EEC proposals—still under discussion—to distil surplus wine into pure alcohol on a compulsory and, probably, more regular basis. BP has warned the UK Government that pure alcohol

Labour has modest hopes for local election success

gain control of three more nine Scottish Regional Councils, London boroughs, making a and 103 of the 296 English non-total of 16 out of the 32, one memopolizan councils.

unnepularity.

The party in London achieved a remarkably low swing-back of only 6 per cent in last year's Greater London Council election and if this is repeated next month its only London gains will be Ealing, Hammersmith and Fulham, and Wandsworth.

Labour is hoping to hold its 13

Labour controls four of the commersurate.

All of the non-metropolitan dispirits have a third of the council standing for election.

Cambridge, Milton Keynes, month its only London gains Basildon, Blacktourn, Crewe and Narotwich, Thomrock and Labour controls four of the council standing for election.

Labour controls four of the council standing for election.

Cambridge, Milton Keynes, and Narotwich, Thomrock and Labour controls four of the council standing for election.

Labour bordon achieved All of the non-metropolitan dispirites have a third of the council standing for election.

Cambridge, Milton Keynes, and Narotwich, Thomrock and Narotwich.

Labour bordon council standing for election.

Cambridge, Milton Keynes, and Narotwich, Thomrock and Narotwich.

Labour bordon council standing for election.

Cambridge, Milton Keynes, and Narotwich, Thomrock and Narotwich.

Labour bordon council standing for election.

Cambridge, Milton Keynes, and Narotwich, Thomrock and Narotwich. London boroughs, although Lambeth could go to any party on the basis of its by-election

results. results.
Labour's most marginal councils are Brent, Camden and Hounslow. Conservatives could A strong showing by the lose control in Havering Allience, particularly if it takes. Beyley, Enfield and Merton and more support from Labour than

THE LABOUR Party hopes to all 36 metropolitan districts

metropolitan district (Dudley)
and seven non-metropolitan districts. I Labour already controls 27 of the metropolitan districts. Only districts, in the May local elections,
A frank analysis of the party's the Liberal-Social Democrats alliance is "throwing a spanner in the works" and that the Labour Party has largely failed troi this year in metropolitan to capitalise on Government areas where only a third of the council faces the electorate. council faces the electorate.

Labour controls four of the nine Scottish Regional Councils and admits it will be doing well to retain them and keep its present 175 regional counciliors out of a total 432.

could well lose Richmond and Conservative, could make even sutton to the Alliance.

In addition to the 32 London and Scotland unattainable for lightness elections take place in Labour.

Irish plan offshore gas pipes to foil terrorists

By Brendan Keenan in Dublin THE PROPOSED natural gas pipeline from Dublin to Belfast may be laid offshore as a way of preventing terror-

This is one of the options being considered by Irish Republic and Northern Ireland officials who are considering the piping of gas from the Kinsale field off

The two governments have decided in principle that the pipeline should be built and the thinking behind the off-shore installation, which would make little difference to the economies of the scheme, is that in shallow coastal waters, it would be much more difficult for tenmuch more difficult for ter-rorists to attack the line.

Mr Albert Reynolds, the new minister for Industry and Energy, has ordered an investigation into Irish energy prices, which are among the highest in Europe.

The Irish Government, which applies price control through a national prices commission, has already ordered petrol companies to cut their prices by an aver-age eight pence a gallon.

More N. Ireland textiles jobs threatened

هكذامن الأحهل

Workers at Dungannon are trying to avert the closure of Courtaulds' local dyeing plant. Tim Dickson reports

gannon. The vantage point for

Today, however, the 25,000 the Irish Republic. inhabitants of the town and a good many others in the embattled "province" (as Northern Ireland is often referred to locally) are hoping desperately that an Englishowned multinational will not go

For if Courtaulds, the UK texthe dyeing and finishing part of the world famous Moygashel company. Dungannon sbortly become one of the worst unemployment blackspots in

job but the proposed closure will take this figure to not far short of 40 per cent. According to the group representing the 300 workers at

Brown and Adam there are also severe doubts about the 460 remaining jobs in the Moygashel group and if these were to go the unemployment total could

ON A CLEAR day, it is said, proved by the announcement on before being absorbed by you can see all six counties in Thursday that Steegun, another Northern Ireland from the Courtaulds subsidiary in Bel-

this view is the site of an old been the main employer in a But in recent years (particularly castle where the proud O'Neills, town which lies roughly 35 under Courtaulds' ownership) the Earls of Tyrone, kept the miles to the west of Belfast and the emphasis has been firmly at its closest point is only about downmarket in viscose rayon 12 miles from the border with

> sive histories of any textiles business in Northern Ireland. Its origins go back to the end of the 18th century when two brothers set up as flax merchants in the area.

Moygashet Mills, the factory which made and still makes tiles company, carries out a these fibres into some of the threat to close Brown and Adam, most famous Irish linen in the world, was not started until Many of the families who

worked in Moygashel in the early days are still connected Already, 34 per cent of the small village of the same name men in the area are out of a on the outskirts of Dungannon. The skills of these men and women contributed greatly to the growth of the business number of other Northern Irish family-owned companies to produce a powerful vertically integrated textiles group encompassing spinning, weaving, dyeing and finishing.

The reputation of Moygashel highest piece of ground in Dun- fast, is also going to be closed.) linen in the U.S. opened up a Moygashel has for generations major market for the group.

> Linen and linen mix, whose main advantage when used in clothing is its coolness but which creases easily and is expensive, today account for only about 20 per cent of Moygashel output. The company's machines, bowever, still give the rayon fabrics a "linen look" which is an important marketing advantage in over-

Courtaulds' decision early last month to close Brown and Adam and move dyeing and finishing to another site in Rochdale, Lancashire, has come as a hamwith the works which lie in a mer blow to the whole com-small village of the same name munity. The 460 jobs which will of them at the Braidwater Spin-ning Company in Ballymena. Co. Antrim) compares with the 3,000 to 4 000 employed in the early UK group took control in 1968.

Courtaulds believes Brown and Adams is no longer viable. It points to losses running into hundreds of thousands of pounds reach an unprecedented 50 per cent. (Confidence was not imquoted company in the 1950s / which are still continuing. Com-Movgashel became a publicly- in the year to March last year

netition from cheap imports

and the recession in the textiles

sector are to blame, as well as

Around Britain: DUNGANNON

the high overheads of the Moygashel works. The works action committee. however, has other ideas and points out that the Moygashel group as a whole made a £im profit in the year to March just ended. With the support of Ulster's three Euro MPs, local councillors and transport union officials are putting forward an £8.4m modernisation plan as an alternative to closure. Local management had already tried to get this sort of commitment

Meetings Northern Ireland Department of Commerce (which would presumably have to provide the bulk of funds). Courtaulds and the action committee have so far failed to find an agreeable

Courtaulds

success.

without

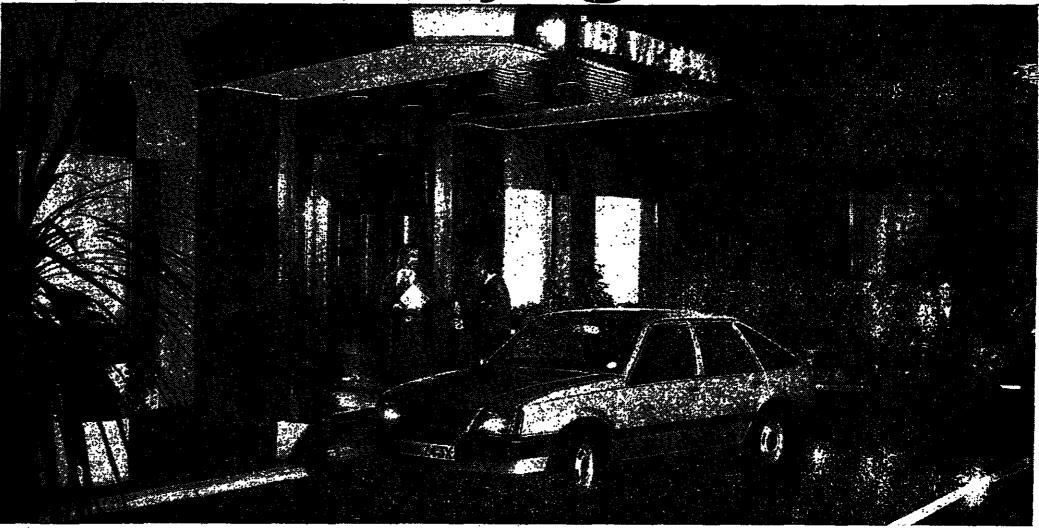
According to Mr Ken Woods of the committee the Government "has already agreed to put up £4.5m. Some of us were told at a meeting with Mr chairman, that the company might reconsider if the Government could find 75 per cent of the £8.4m. The Government therefore has to find only another £2m which does not seem much compared with all

keep people on the dole." Moygarhel's skilled and lova workforce naturally feel that closure would bring about a ig waste of human resources.

the money they will need to

Understandably, they aiso think that some of the funds which are apparently made so readily available for the likes of Mr John Z. DeLorean could he spared to avert the threat to them all and their com

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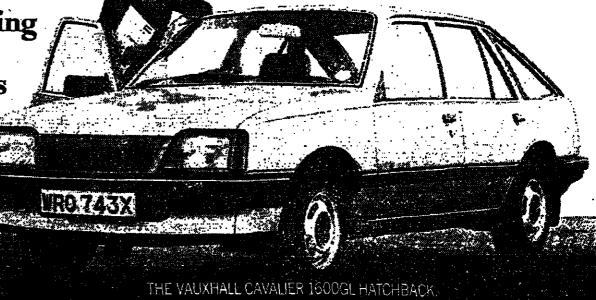
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However, this protection—given by Section 62 of the Employment Protection (Consolidation) Act 1978 passed by the last Labour Government. does not allow a hearing on complaints of unfair dismissal by workers who take strike or other forms of industrial action unless the entire striking workforce was dismissed.

Chause 7 of the Bill amends this provision, breaking the employers "all-or-nothing" restriction. Workers will not be where the employer has: given notice to every employee on strike that any of them not returning to work in of the Bill as an invitation to a specified period of at least get rid of shop stewards and four working days may be

• not dismissed the employee

THE INSTITUTE of Directors

is sending its members advice on how to combat the

TUC's campaign against Mr Norman Tebbit's Employ-ment Bill.

In response to the TUC

strategy (adopted at a special conference on April 5) of

warning employers of "the

risks of widespread disruption

if they use the proposed

legislation," a briefing paper

will go to all IOD members

It points out that the TUC

policy of calling industry-

wide strikes in support of a

union taken to court would

probably be unlawful under

the 1980 Employment Act—on

the grounds that they had a

The briefing also aims to

provide the 41,000 business

with responses to the main

political objective.

. Director

Advice to directors

CLAUSE 7 of the Employment Bill gives exploit the disadvantage usually substituted by one side or the employers the right to sack a striker under other as a result of the strike. certain conditions. Philip Bassett looks at the difficulties, an employer could implications.

concerned before the end of the specified period; and
then dismissed all employees still taking part in the strike. While not affecting employers'

existing right to dismiss strikers without notice, this clause clearly provides them with weapons that some have been seeking—the ability to pick out and deal with industrial troublemakers and the "work-or-else" ultimatum.

Trade union officials believe that this provision was inspired by the tough tactics of Sir Michael Edwardes, BL chair-

They feel that faced with the combined might of trade union strength, few employers would have the nerve to copy Sir Michael's sacking of Mr Derek. Robinson, the militant Longbridge convenor, or to force strikers back to work with the threat of closures and dis-

The TUC sees this provision get rid of shop stewards and other activists more likely to resist management warnings and continue their strike.

criticisms of the Bill, "which

can be used in communications with the work-force wherever

It says: "Legal reform in

industrial relations has sub-stantial and wide-ranging

support, both in the popula-

tion as a whole and among

trade unionists," and it points to the November 1981 MORI

opinion poll on trade union

law which showed majority

support among trade unionists for legislation. The

briefing also states that the

Bill, now at its committee

stage in the Commons, "would not remove any of trade unions' basic rights."

..In response to the likely

trade union boycott of closed

shop ballots, the briefing says:

have to be held without union

co-operation or the closed

shop agreement will have to

be terminated."

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peace of mind they need to get

Running and building the

Either a review ballot will

local opposition appears."

If there were negotiation force the issue by the use of

the return to work notice under Clause 7. In practice, an employer Some unions have seized on

one point in the clause which perhaps is not as restrictive as it might be. Clause 7 refers specifically only to a strike and unions therefore believe that industrial action short of a strike will continue to enjoy the immunities granted by the 1978 Act.

The provisions of Clause 7 clearly do not go as far as the action against selective strikes called for by the Engineering Employers Federation. Its proposals are the subject of an amendment to the Bill sup-ported by a group of Conserva-tive backbenchers. The EEF wants companies to be given the right to lay off workers without pay when strikes elsewhere in the economy restrict

their production. The clause does provide, however, an important tool for employers to roll back further the boundaries of trade union

Tomorrow: trade union immunities and the narrowing of the definition of "lawful industrial action.

Power engineers warn on plutonium exports to U.S.

by Brian Groom, Labour Staff POWER engineers and mana-advance the U.S. nuclear arms

probably would be unlikely to

divide militant members from

the rest unless he sensed that

strikers would prefer to return

to work. In theory, an employer

could repeatedly issue warning

notices until the number on

strike had been whittled down

For unions paying strike pay

-particularly white collar unions—the clause could have

considerable financial implica-

tions. They could be commit-

ted to paying those dismissed who had no likelihood of a claim

for unfair dismissal. In a large-

scale strike, the bill for the union could be prohibitive.

To prevent a successful use

of divide and rule, unions would

have to impress upon their

members that if they return to

issued under Clause 7, they would risk the dismissal of their

The clause could also have implications for agreements on

returning to work after a strike.

These agreements are often difficult to conclude since they

colleagues still fighting on.

to leave activists at the core.

gers in Britain are threatening programme. to reconsider support for future to reconsider support for future development of nuclear power, shortage of plutonium for its if civil plutonium is exported to the U.S. without satisfactory gramme because the Carter safeguards its use in an arms-

Mr John Lyons, general secretary of the 34,000-strong Electrical Power Engineers' Association (EPEA), is likely to approach the Government and the Central Electricity Generating Board soon to make the union's view clear. Withdrawal of co-operation

by the EPEA could have serious consequences. It represents more than 95 per cent of technical, scientific, professional and management staff in the electricity supply indutsry. Deep concern about the plutonium issue emerged at the

Administration halted the reprocessing of spent fuel. It has approached the British Government about exports from the UK and Whitehall has approved in principle.
The Government has said any

exports would be made only after assurances that the materials would remain subject to international safeguards under the U.S. treaty with the International Atomic Energy Agency.

This does not satisfy the EPEA. It fears that the use of UK civil plutonium in U.S. fast reactors would release U.S. plutonium for use in weapons. union's annual conference last The association claims that week. It expressed anxiety that monitoring procedures by the UK civil plutonium could be Energy Agency do not prevent

"directly or indirectly" to such a consequent Managers' unions bid for national EEF recognition

BY OUR LABOUR STAFF

TWO MODERATE managers' nnions seem set to fail in their to reject the approach, prefer joint bid to win national recogning to leave it to individual joint bid to win national recognition for collective bargaining from the Engineering Employers' Federation.

The Electrical and Engineering Staff Association (Eesa)the staff section of Mr Frank Chapple's electricians' union and the Engineers' and Managers Association are likely to make their approach at the end

of this month. Collective bargaining forms a central part of the agreement between the two moderate TUC unions and they believe it would assist them to win recognition in individual engineering companies. They wish to work together to expand their joint membership of 15,000 professional and managerial staffs in engineering and

The Engineering Employers'

Federation is virtually certain member companies to decide whether or not to recognize the two unions

REF leaders feel national recognition would serve little purpose, as it would not involve national negotiations and the two unions do not have large enough memberships in engineering to warrant it.

move would also be opposed by some of the five white-collar unions in the Confederation of Shipbuilding and Engineering Unions, which the EEF already recognises-narticularly AUEW-Tass and the Association of Scientific, Technical and Managerial Staffs (ASTMS).

These two unions are already engaged in a battle with the EMA and Eesa to win Eesa to win managerial members.

from £230 to £446. The rise

ICL increases weighting

MAJOR increases in the London

allowance have been won by 2,500 members of the Association of Scientific, Technical and Managerial Staff (ASTMS) employed by International Computers (ICL).
The allowance for 1,810 staff

came into effect on April 1.

Mr Tim Webb, the ASTMS national officer who negotiated the deal, said: "This is a major breakthrough given the recent financial problems of ICL and the pay freeze of 1981." He in the inner London area has added that negotiations were going ahead for the 1982 pay increased from £544 to £1.003. and for 720 in outer London

Steel unions attack sale

THE TUC steel committee has condemned as a "give-away" the planned sale of British Steel Corporation's Redpath Dorman Long heavy engineering subsidiary to Trafalgar House for

Most of RDL's nine unions are represented on the committee. One which is not, the Steel Industry Management Association, has proposed an employee buy-out of the company.

The TUC committee said collective bargaining issues were cerning the sale of public assets.
"We understand that the powerful and wealthy Trafalgar House conglomerate are even contemplating depriving RDL manual workers of their hardearned pensions scheme. Under BSC, they enjoy the same pensions as white-collar staff. That will end."

Plessey faces 'loyalty' row

Plessey closed its Bathgate plant in West Lothian last month, with the loss of 250

The workforce occupied the plant for eight weeks, but 88 men and women offered to help the company run down the plant in an orderly manner. They co-operated with local management and made them-

Michael Bell, an Edinburgh solicitor, have written to Sir John Clark, Plessey's chairman and chief executive, asking him to intervene.

bunal or to the Court of Sessions if their appeal to Sir John

FT COMMERCIAL LAW REPORTS

Digest of cases reported in Hilary term

FROM JANUARY 4 TO FEBRUARY 3, 1982

Perdana Properties Bad v United lords in very wide terms, calling Office. However, telephonic was not covered by the standard Orient Lessing Co. Sdn Bhd (FT, January 4).

January 4).

When a supermarket in Jahore

Toront Lessing Co. Sdn Bhd (FT, January 4).

When a supermarket in Jahore

Toront Lessing Co. Sdn Bhd (FT, January 4).

Toront Lessing Co. Sdn Bhd (FT, Januar not only against the scope of the. went into liquidation, its equiporder but against it having have been given at all. The best eviment concerned two parties: the landlords, who wished to distrain dence of open market rent, the for unpaid rent, and the lessors Appeal Court held, was what of the equipment. The latter wrote to the supermarket traders in the area were prepared to pay for appropriate premises directors that they were "assum-Profitability was to be considered ing immediate possession of our equipment under . . the lease only in very particular cases, bu these cases could not be extended into a general rule. The Morkiven (FT, January 19)

agreements." In dismissing the landlords appeal, the Privy Council held that they could have succeeded only if the goods had remained in the tenants' possession with the lessors' "consent and permission." As their letter formed a sufficiently effective withdrawal of consent a formal determination of the lessors determination of the lease was

BV (FT. January 8). The Spanish government un-expectedly refused applications for export licences for foodstuffs in 1976, and the defendant sellers claimed protection of the Gafta form 100 which cancels the contract of sale in cases of prohibition of export through government intervention. Their contention was dismissed, how-ever, as they had a binding contract of sale for sugar beet with the plaintiffs, for which they had

received a licence, and this overrode any other, informal agreement that they had entered into for the sale of similar foodstuffs. Mutual Life Insurance Company of New York and others v Rank Organisation Ltd. and others (FT The contention that share-

holders of the same class cught to be given equal treatment was dismissed in the Chancery Court. No overriding term in the membership contract entitled all shareholders to identity of treatment provided the directors acted fairly and in good faith in the company's interests. In this case, the American shareholders were treated fairly although disqualified from purchasing newly-offered shares to existing shareholders because of federal government restrictions. Tropwood AG of Zug v Jade Enterprises Ltd (FT, January

In restoring an arbitral award, the Appeal Court held that a clause in a charterparty which appeared quite meaningless ought not to be rejected. Rather it ought to be given the meaning the parties intended, and this could be ascertained by looking at somewhat similar clauses in the shipping trade. Words could be supplied, or implied, and the punctuation altered before resorting to outright rejection. Another phrase, moreover, as to whether the vessel was "on the voyage to the port of redelivery' was an arbitral finding of fact, not of law, with which the Court

ought not to interfere. . W. J. Barton Ltd v Long Acre Securities Ltd (FT, January 15) On application to a county court judge for a new lease under the Landlord and Tenant Act, an order for specific complete when a written accep-discovery was given to the land- aance is handed to the Post

arose, the telephone rule was the Law Lords refused leave to serve a writ out of the jurisdiction on the grounds that a contract was concluded in Vienna where the telex acceptance was received. This rule, they warned, could not be regarded as covering all possible cases. British Steel Corporation

carried by sea ought to be subject to the same rules to manufacture steel nodes. governing the parties' rights and habilities. To this end, the 1971 work was commenced at the defendants' request, "pending" a formal contract. The defendants wrote a "letter of intent" Carriage of Goods by Sea Act incorporated the Hague-Visby Rules, making them paramount in any bill of lading. Their so as to expedite delivery. The contract never materialised and provisions were to apply what-ever might be the proper law its likely terms were never ascertained. Mr Justice Goff held of the contract, in the interests of all concerned in a shipping that the defendants' contention that they could counter-claim for transaction. The action in the present case should proceed in late delivery could thus not be sustained while BSC was sustained an English court, where clause 2 of the Bill of Lading, limiting liability under the old Hague entitled to a reasonable sum for the completed work. Tor Lines AB v Alltrans Group of Canada Ltd. (FT, January 29). Rules, was null and void. Earl of Lonsdale v HM Attorney

It is public policy, the Appeal Court stated, that all goods

General (FT; January 20)
The Earl of Lonsdale's claim that he owned oil and natural gas under the seabed off the Cumbrian coast was dismissed in the Chancery Court. In 1880, the Crown had conveyed to the Lonsdale family its interest in mines and minerals on that coastline. The Court, in constru-ing this conveyance, had to place itself in the position of the parties at that time. The context of 1880 made it plain that the phrase "mines and minerals" applied only to solid substances capable of being dug out of the graund. Furthermore, a grant involving the Crown had to be construed in a way most favour able to the grantor. Pilkington Brothers Ltd v In-land Revenue Commissioners

(FT, January 22)
Another tax avoidance scheme came up for consideration before the Law Lords who, by a majority, again overruled Chancery Court. They held that "arrangements" entitling a company to group relief under the Finance Acts ought not to be narrowly construed. A restrictive interpretation, they felt, cut down the plain meaning of the statute. Thus Pilkington's scheme to purchase a ship from Manchester Liners and to offset the expense against taxable income was disallowed. Its "arrangements," involving the reconstituting of three other companies, failed to comply with

Brinkibon Ltd. v Stahag Stahi und Stablwarenbandelsgesell-schaft MmbH (FT, January 29). Modern telecommunication is compounding the problem of when and where a contract is concluded. The 19th century rule holds that a contract is out of the Dip in the Westley complete when a written accep. Maiden Stakes.

broad interpretation of the

held to apply to them, too. Thus February 2) Because the law of England was so favourable to under-writers, and could work such

hardship on the insured person. Mr Justice Lloyd held that the general rule on non-disclosure of a material fact was that the Court had to be satisfied that a Court had to be saused that a prudent insurer — if he had known the fact in question — would have declined the risk altogether or charged a higher premium, Merely to assert that with the additional information Cleveland Bridge and Engineering Co Ltd (FT, January 27) When British Steel entered into negotiations for a contract the underwriter's approach might have differed provided insufficient evidence to support an allegation of non-disclosure. Kamouh v British Aircraft Corporation (Operating) Ltd (FI,

February 3)
Mr Kamouh's brother disappeared on November 14, 1973 in circumstances pointing strongly to his death on that day or shortly thereafter. The plaintiff sought leave to akter his capacity from judicial administrator (an appointment he received in Beirut) to that of administrator of his brother's Mr Justice Bingham said that estate. Alternatively, he sought he took the unusual step of combining an application for to pursue proceedings under an English grant of letters of administration. Both applica-tions were refused. His brother leave to appeal against an arbitral award into a full appeal in order to obviate the expense could not have been a party to the action when, in 1975, Mr of a further hearing. The argu-Kamouh issued his original writ so that the presumption of conment concerned a standard ing the owners from liability. In tinuance of life was of no assistance. Nor could the plaintiff change his capacity once the another clause the charterers had specified their requirements for writ was issued and the limitaa vessel intended to load contion period expired, Mr Justice tainers. The owners failed to supply a vessel of these dimen-Parker held sions. Upon consideration, the judge was persuaded that the umpire's finding was correct that

A digest of cases reported between February 5 and March 5 will appear

reproducing the sye-catching homework which led to his

By Aviva Golden

RACING

a breach of these undertakings

clause in a charterparty exempt-

BY DOMINIC WIGAN

SIMPLY GREAT now stands shorter in the 2,000 Guineas betting than any of Guy Harwood's possible runners, and he is certain to start a hot favourite to account for Pulborough's Norwick and seven others in the Craven Stakes at Newmerket today. On "the book," Simply Great, whose formidable reputation took a battering when he trailed home seven to nine behind Wind and Wuthering in the

William Hill Dewhurst at Newmarket, has no chance today—let alone in a classic field. However, before that effort, Simply Great had shown immense promise, not only on the gallops but when smothering his rivals for speed coming Now back in top trim and

being backed for a Guineas Derby double before his race-course debut, the Warren Place colt should lift the Ladbrokes prize today without too much difficulty. But, with his eads for the 2,000 Guineas arready hardened to 8-1, would be classic supporters should wait and see how he comes out of this much less exacting test. On the 1,000 Guineas front, the consensus now seems to be firmly behind the possibility that Simply Great's pilot Lester Piggott, will be on the French filly. Play It Safe, rather than Sing Softly, on April 29.

NEWMARKET

2.00—Victory House 2.30—Military Band*** 3.00—Airspin 3.30—Simply Great 4.65—Lahab

3.00—Born to Reason

LONDON

9.30 am World Famous Fairy

Tales. 9.45 Wild, Wild World of Animals. 10.10 Animated Classits.

10.55 The First Day, 11.25 Paint

Along with Nancy. 11.55 The Bubblies. 12.00 Button Moon.

12.10 pm Let's Pretend. 12.30 The

Sullivans. 1.00 News, plus FT Index. 1.20 Thames News with

Robin Houston, 1.30 Crown Court, 2.00 For Christ's Sake!

4.35-Jacquinta** CHEPSTOW

3.30—Lesley Ann 4.00—Forbidden Fruit*

TELEVISION

Three fresh, if not strictly new series tonight: Young Musician of the Year and Play for Tomorrow on BBC 1 and Sorry I'm A Stranger Here Hyself on ITV which is developing an unusually

powerful Tuesday night. With repeats of The Morecambe and

Wise Show followed by their serial The Brack Report about a

rebellious (and of course brilliant) nuclear scientist, and then, after News at 10, Desmond Morris's series on The Human Race

which tonight is devoted to modern substitutes for the ritual of

The sitcom Sorry Pm a Stranger Here Myself stars the inimitable Robin Bailey who in the first series left his wife in

Datchet and returned to Stackley to discover a green-haired

punk squatting in his house. In the new series he returns to

Sybil whose life is governed entirely by television programmes.

The third series of Young Musician of the Year involves 44

competitors in the semi-final rounds. In tonight's opening pro-

gramme the previous winners Michael Hext and Nicholas Daniel talk about their experiences and Lady Evelyn Barbirolli discusses

the contest from the judges' point of view. Play For Tomerrow

is a series of six dramas offering different views of the near future. Tonight "Crimes" by Caryl Churchill forsees over-

crowded prisons (that takes prescience?) and opens with a group

the hunt, they have a strong mixed middle-brow schedule.

BBC 1 † Indicates programme in black and white Chris Dunkley: Tonight's Choice

9.55 am The Wombles. Jackanory with Bernard Cribbins. 10.15 Lassie: 10.35-11.00
Why Don't You . .? 12.20 mm
News After Noon. 1.00 Pebble
Mill At One. 1.45 The Flumps. †2.00 "The Goose Steps Out" film starring Will Hay. 3.15 Songs of Praise from Wells Cathedral. 3.53 Regional News for England (except London). 3.55 Play School, 4.20 The All New Popeye Show. 440 The Record Breakers with Roy Castle and Norris McWhirter. 5.05 Newsround with Paul McDowell 5.10 Break in the Sun. 5.35 The Perishers.

5.40 News. 6.00 Regional News Magazines.

6.25 Nationwide, including
"The Bomb Disposal
Men "report.
6.55 Barney Bear (cartoon). 7.05 Young Musician of the Year. 7.40 QED. "Light Creatures of

the Night"
8.10 Flesh and Blood starring Thora Hird, Bill Fraser, Nigel Stock and John

9.00 News.
9.25 Play for Tomorrow
"Crimes" by Caryl
Churchill, starring Julia 10.25 Snowdon on Camera:

11.03 News Headlines. 11.05 Harry O

ANGLIA

9.30 am Sesame Street. 10.30 Friends of My Friends. 10.55 Joe 90. 11.25 Aftered-Images in Concert. 11.50 Wettoo Wattoo. 12.30 pm Gerdening Time. 1.20 Anglia News. 3.45 Looks Femiliar. 5.15 Diff rent Strokes. 6.00 About Anglis. 11.30 Quincy. 12.25 am The Bible for Today.

CENTRAL

9.35 am 3-2-1 Context. 10.05 Pro-Celebrity Angling. 10.30 Falcon Island. 10.55 Portreits of Power (De Gauke). 11.20 For Club and Country. 12.30 pm The Young Doctors. 1.20 Central News. 3.45 Looks Famiher. 5.15 Radio. 8.00 Crossroads. 6.25 Central News. 11.30 Central News. 11.35 Pro-Celebrity Angling. 12.05 am Tuesdey Jazz end Blues: John Lee Hooker.

Foster and T. P. McKenna.

the King. 10.55 The Bubblies. 11.00 Sesame Street. 1.20 pm Granada Reports. 1.30 Exchange Flags. 1.55 Crown Court. 3.45 Looks Femilier. 5.15 Happy Days. 6.00 This is Your Right, 6.05 Crossroads. 6.30 Granada-Reports. 11.30 Barney Miller. 12.00 Lets Night Irom Two. All IBA Regions as London except at the following times:

11.00-11.25 am Play School †3.40 pm Easter Matinee: "The Girl of the Golden West' starring Jeanette Mac-Donald and Nelson Eddy. 5.35 Hawk of the Wilderness. 5.55 The Waltons. 6.40 One Hundred Great Paint-

HTV

9.45 am Joe 90. 10.10 Survival.
10.35 The Flintstones. 17.00 Seseme
Street. 12.30 pm Paint Along with
Nency. 1.20 HTV News. 3.45 Looks
Familiar. 5.15 Diff rent Strokes. 6.00
HTV News. 5.35 Crossroads. 10.23
HTV News. 11.30 Portrant of a Legend
(Stevie Wonder).

SCOTTISH

9.30 am Our Incredible World. 9.50 Tuesday Matines: "Big Bob Johnson and His Speed Circus." 11.25 How the Hedgehog Grew Larger. 11.60 Watton Wattoo. 12.30 pm Gardening Time. 1.20 Scottien News, 3.46 Looks Familiar. 5.10 Traveller's Teles. 5.20 Crossroads. 6.00 Scotland Today followed by Job Spot. 6.30 What's Your

BBC 2 6.50 News Summray. 6.55 Broadway Musicals: "A Furny Thing Happened on the way to the Forum." 8.30 Top Gear. 9.00 Pot Black 82.

Problem? 11.30 Late Call. 11.35 Naro

TSW

TVS

9.35 am Survivel. 10.00 Bailey's Bird. 10.30 Européan Folk Talkes. 10.45 Billy Smart's Easter Circus. 1.20 pm TVS News. 3.45 Looks Familier. 5.15 Redio. 5.30 Coast to Coast 6.00 Coast to Coast (continued). 11.30 Brass in Concert. 12.15 sm Company.

TYNE TEES

.9.20 am The Good Word, 8.25 North

9.40 Fields of Play.

10.45-11.35 Newsnight-

presented by Anna Ford. 225 Racing from Newmarket covering the 2.30, 3.00 and 3.30 races. 3.45 Home Sweet Home. 4.15 Road Runner. 4.20 On Safari 4.45 CB TV—Channel 14. 5.15 The

Brady Bunch. 5.45 News. 6.00 Thames Andrew Gardner and Rita Carter. Crossroads.

7.00 Horace. Give Us a Clue: Michael Aspel and team captains Una Stubbs and Lionel Blair are joined by Liz Fraser, Denise Nolan, Richard-O'Sullivan, Lance Percival, Wayne Sleep and Victoria Wood.

8.00 Sorry I'm a Stranger Here Myself. 8.30 The Morecambe and Wise Show with Gemma Craven. 9.00 The Brack Report.

10.00 News. 10.30 The Human Race.

11.30 Kaz. 12.25 am Close: Sit Up and Listen with Tim Rice.

Rest News. 9.30 Bailey's Bird. 9.56 Recing Rivers. 10.15 Morring Movie: "Tarzan Goas to India." 11.50 Selvand Jake. 1.20 pm North East News and Looksround. 3.46 The Riordans. 5.15 Survival. 6.00 North East News. 6.02 Crossroeds. 6:25 Northern Life. 10.30 North East News. 11.30 The Two of Us. 12.00 The New Life. 9.30 am Larry the Lamb in Toytown.
9.40 Sesame Street. 10.40 The Royal Henley Boating Regetts. 11.25 Paint Along with Nancy. 11.55 The Undersea Adventures of Capten Nemo. 12.30 pm Brgones. 12.20 TSW Naws Headlines. 3.45 Welcome Back Kotter. 5.15 Gus Honeybun's Magic Birthdays. 5.20 Crossroads. 6.00 Today South West. 6.30 Looks Familiar. 10.32 TSW Late News. 11.30 Nero Wolfe. 12.25 am Postoript. 12.30 South West Weather.

ULSTER

10.25 em "The Lion, The Witch and the Wardrobe," 1.20 pm Lonchime. 1.22 Cartoon Time. 3.45 Looks Familiar. 4.13 Uister News. 5.15 Radio. 2.30 Hoar Here. 6.00 Uister News. 6.05 Happy Days. 10.29 Uister Weather. 11.30 News at Bedtime.

YORKSHIRE

9.20 am Lurry the Lamb. 9.40 Sesoms Street. 10.40 Patterns. 11.05 Wilder-ness Alive. 11.35 The Underses Adven-tures of Captain Nemo. 12.30 pm Looks Familiar. 1.20 Calender News. 3.45 Calendar Tuesday. 5.15 Mr Merid. 6.00 Calendar (Emley Moor and Belmont editions). 11.30 Barney Miller.

to work while colleagues staged to be paid for that period - a a sit-in over closure, say they are not going to be paid for total amount estimated at £80,000_ their loyalty to the company.

Now they learn they are not . The workers, helped by Mr

They are prepared to take their case to an industrial tri-

(S) Stereophonic broadcast (when broadcast on VHF)

GRANADA

9.30 am European Folk Teles. 9.40 Joe 90. 10.05 Survival. 10.30 Anna and

RADIO 1 5.00 am As Radio 2 7.00 Miks Read. 8.00 Simon Betes. 11.30 Dave Lee Travia. 2.00 pm Steve Wright. 4.30 Peter Powell. 7.00 Telkabout, 8.00 David Jerjsen. 10.00-12.00 John Peel

RADIO 2 5.00 am Nick Page (S), 7.30 Ray Moore (S), 10.00 Jimmy Young (S), 12.00 Glone Hunniford (S), 2.00 Ed Stawart (S), 4.00 Devid Hamilton (S), 5.45 News; Sport, 6.00 John Dunn (S), 8.00 The Golden Age of Hollywood (S), 9.00 Listen to the Bend (S), 9.30 The Organist Exercisins (S), 9.55 Sports Desk, 10.00 The Archur Askey Show, 11.00 Brian Matthew with Round Mid-

RADIO

night. 1.00 Big Band Special with The Radio Big Band (S). 2.00-5.00 You and the Night and the Music (S). RADIO 3

RADIO 3
6.55 am Weather, 7.00 Nawe. 7.05
Morning Concert (S), 8.00 News. 8.05
Morning Concert (continued), 9.00
News. 9.05 This West's Composer:
Mozart (S), 10.00 Barlet Music (S),
11.05 Atherni String Quartet (S),
12.05 pm BBC Weish Symphony
Orchestra, part 1, (S), 1.00 Nawe.
1.05 Six Consinents, 1.25 BBC Weish
Symphony Orchestre, part 2 (S), 2.00
Bach chamber music recital (S), 2.50
British Music (S), 3.55 Kabalevsky
cello and plane recital (S), 4.25 Jazz
Today (S), 4.55 Nawe. 5.00 Mainly
for Pleasure (S), 7.00 Teka Jt Prezarioil
A profile of Lester Young, whose play-

ing sarned him the nickneme, President of the tenor sexophone. 7.55 Words. 8.00 Aguro Benedetti Michelangeli pieno recital from the Royel Festival Hall, London, pert 1: Besthoven (S). 8.50 The Take-Away Guerrita.
9.10 Arturo Benedetti Michetengeli recitel, part. 2: Debuesy (S). 10.00 Over
the Bridge. 10.40 Telemann (S). 11.00
News. 11.05-11.15 Eneaco (S). RADIO 4

HADJO 4
6.00 am News Briefing, 6.10 Farming Week, 6.25 Shipping Forecast, 6.30 Today, 8.43 The Richard Strigos Latters (5), 8.57 Weether: travel, 8.00 News, 9.06 Tuesday Call (Astronomy), 10.00 News, 10.02 From Qur Own Correspiondent, 10.30 Daily Service, 10.45 Morning Story, 11.00 News, 11.03 Thirty-Minute Theatre, 11.33 Wildsife.

12.00 News. 12.02 pm You and Yours.
12.27 Detective. 12.55 Waether, travel. programme news. 1.00 The World at One. 1.40 The Archers. 1.55 Shipping Forecast. 2.00 News. 2.02 Women's Hour. 3.00 News. 3.02 Ann Varonica by 4. G. Wests (S). 4.00 News. 4.02 Edward Billian reflects on walking. 4.10 The Vicer's Wife. 4.40 Story Tippe. 5.00 PM! News magazine. 5.55 Shipping Forecast. 5.55 Waether, programme news. 6.00 News, including Financial Report. 6.30 Brain of Britain 1882 ** 7.00 News. 7.05 The Archers. 20 Medicine News. 7.05 The Archers. 20 Medicine News. 7.05 The Archers. 20 Medicine News. 7.05 In Touch. 9.30 Kaletdiscope. 9.55 Weather. 10.00 The World Tanight. 10.30 And So To Ned. 7.100 A Sock at Bedsme. 11.15 The Fidancial World Tanight. 11.30 Chamber. Jazz. (S). 12.00 News.

Send to: Mr. Charles McCartan, Marketing Manager, FREEPOST Address tho stamp required, Trade Indemnity plc. Trade Indemnity House, 12-34 Great Eastern Street, London EC2B2FI. Telephone 01-7594511.

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31.10.0

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In fact, a great deal had changed since the previous summer. Colt had been to the Llay works and installed a warm-air heating system of modest capacity, but combined with some very clever energy-saving devices.

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A system of Wastemaster Mk. II fans was also fitted, to counteract heat loss through the roof. These fans create a cushion of air which holds the heat down at working level, where it belongs.

The results? In the first half of last winter alone, Rubery Owen Rockwell spent £10,000 less on fuel-a 41% saving on the previous year.

But last winter was no ordinary winter: allowing for the record low temperatures, and the company's longer working hours, Rubery Owen Rockwell estimate their savings at 67% in real terms.

And as the cold was closing down other factories, they also saved several working days, which would otherwise have

cost them £70,000 in overheads.

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EDITED BY CHRISTOPHER LORENZ

Pooling resources to help large and small

James Buxton examines how an Italian entrepreneur has set up an American-style joint venture with Olivetti

pool forms on the 13 big games which are played on Sunday afternoon. Instead of sending them in by post they take them to their local tobacconist or bar, which about 14,000 function as agents all over the country. The agents then send the forms Rome headquarters of the Totocalcio pools organisation. where, after immense labours by an army of sorters, the winners are announced on the following Wednesday.

It is a system crying out to be automated but how do you automate simple back street tobacconists and bar-keepers? The answer has been devised

by Massimo Rinaldi, a 53-yearold inventor and businessman who runs his own company.
Mael Computer. He has
designed a small very simple
but robust machine which anyone can operate. The punter or the tobacconist inserts the pools entry, the machine scans the marks on it, which must have been made in blue or black ink, records the details in a bar code on a tape and gives the punter a receipt.

The agent then forwards the tape to a regional centre, which sends it to Rome where a computer decides the winners. "By

crowds are leaving the stadium." says Rinaldi.

Rinaldi is hardly one's idea of typical Italian electronics designer. He is a rather thick-set Roman, swallows part of his sentences and describes his inventions in so matter-of-fact a way that one gets the impression that almost anyone could have invented them. Like many successful Italians whose names have got into the newspapersoften via the pernicious medium of lists of people who have or have not paid their manently in his waistband as a guard against kidnapping. "And I know how to use it," he says.

Stretched

The contract for up to 14,000 machines for Totocalcio, was agreed last month and will be worth L50bn over two years. It could bring in a total of L100bn over the next nine years, counting service contracts. But it has affected the future of

Its 1981 turnover was L16bn (£6.8m), and it has other important contracts in the pipe-line. Its financial resources

EVERY WEEK between 10m largely installed, the winners of indigenous computer manuand 20m Italians fill in football should be announced while the facturers that it claims to be should be announced while the facturers that it claims to be enough are leaving the stadium," the only significant Italianapart from Olivetti to have its own design capacity — that is Rinaldi, himself an electronics engineer, and about two dozen assistants. Yet it employs only 190 people,
Its little factory is at Carsoli,

on a bleak plateau in the Abruzzi mountains about 45 minutes up the motorway from Rome. That puts it within the assisted area of the Mezzogiorno (the South) but its ten-year tax holiday has now run out and Rinaldi plays down the other incentives for being there. But since it is the only computer manufacturer based in the south, Maei benefits from a law that obliges the state sector to place 30 per cent of its orders with southern-based companies. The company claims consistently to have made profits

to quadruple its labour force and needing to increase its due course it should get a good voting L1.5bn capital, Mael bad to look financial return; many of the trol. for more financial backing companies in which Olivetti in-Having ruled out bank borrow- vests have growth rates of 30 the high interest rates line. Its financial resources (prime rate of 21.75 per cent) its latest investments is a 20 tronic product is obsolete in looked like being stretched.

Such is the relative paucity twinkling of an eye," says automation company set up in will be happening when the

(though it does not disclose



Rinaldi - Mael hit upon 1978 by some former Exxon Olivetti already had a policy of investing venture capital in-to small, technologically

advanced and expanding com-panies. In the past three years it has made nearly 20 such investments, most of them in the U.S., a fact which has caused it some embarrassment in Italy. The advantage of the policy

to Olivetti-as to the many large companies which have set up similar joint ventures in the U.S.—is not only that it gains know-how that it might With the possibility of having take two or three years to develop on its own, but that in to 40 per cent a year. One of

Under the agreement with Olivetti Mael's capital was increased to L2.5bn and Rinaldi's partner, an influential businessman named Franco Pesci, sold out to Olivetti — giving it 70 per cent of Mael's share capital. But Rinaldi will retain control of the company for three years through a 50.02 per cent holding of voting shares, the rest being held by Olivetti. Olivetti is also making available a L5bn

credit line After three years the big company will be able to convert its non-voting shares into voting ones, thus gaining con-trol. The prospect does not seem to bother Rinaldi much. "Frankly, in this business things move so fast that an elec-

Olivetti will supply some parts for the Totocalcio machines as it would have done anyway, and some of the machines and services may be made in Olivetti factories. Olivetti will help to market Mael products in areas abroad where it is strong, such as Spain and Latin Americabut not in Italy.

Mael will be expected to provide know-how to Olivetti for certain projects that Olivetti is interested in but the manage-ment and marketing of the two companies will remain separate and for a time they will com-pete in the business computer field, where Mael's leading computer model has greater capacity than any model made by Olivetti.

Olivetti's strategy is to give us the freedom we need so that we don't lose our agility," says Rinaldi.

Publishers panned for ignoring 'gap'

given in the latest issue of learn." Harvard Business Review.

In classic entrepreneurial fashion many publishers have heeded the call for more and better information by rushing into print with new books. magazines and feature articles devoted to starting and operating small businesses.

But the publications, including more than 50 books published over the past four years and three new magazines, are not filling the information and education gap, according to David Gumpert, a staff writer on HBR and co-author of a book on small businesses. In a review of much of the available U.S. literature about

running a small business. publications have done little to help their readers solve the problems associated with planning and strategy, marketing, organisational behaviour, exporting and consulting services. When writing about many

important issues many academics and consultants merely simplify the theory and practice used in large companies, he says. Few present exciting or original points of

Small business

AN UNFLATTERING critique view and many adopt the of the current outpourings of attitude that "with persistence American publishers on the and common sense, entresubject of small business is prencurial skills are easy to

The publications are by no means all useless, however. Many concentrate on short-term managerial and legal problems, financing sources, franchising and the problems of selling to government bodies. This fills a void for small businessmen.

most of whom cannot afford specialist staff or consultants. Despite their - weaknesses, Gumpert says that the new publications are beginning to answer an important educational need. He believes that they "hold out the promise that researchers will fill the remaining gaps as interest academic area continues

The increased awareness and new information should help small business owners do a botter job of managing and add realism to the dreams of prospective entrepreneurs," he

Entrepreneurship: a new literature begins. Harrord Business Review, March-April issue, Boston, MA. 02163,

Arnold Kransdorff

abstracts

Capital budgeting in small companies, T. H. McInish and R. J. Kudla in American Journal of Small Business (US), Spring 81 Discusses the net-present-

value approaches to capital budgeting, argues that it may not be suitable for "closelyheld" and small businesses, and explains alternative methods: required rate of return and "cer-tainly equivalent." Small business information

systems. P. Hooper and J. Page in Journal of Systems Management (US), Sept. 81 Suggests that developments in computer hardware have not been matched by improvements in usage, and discusses why this is so; with small businesses in mind, describes the development of a generalised information system, and examines the flows of information within and between the component parts.

A Viewdata system for indepen-dent grocers. J. Bamfield in Retail and Distribution Management (UK), Nov./Dec. 81 the Spar (voluntary) Chain-

have not done so already.

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order supplies from James Hall and Co (wholesalers) by telephoning the company's comquantities as each item appears on a visual display unit; examines benefits for supplier and retailers, and mentions

Growth planning for small business. J. F. McKenna and P. L. Orbitt in American Journal of Small Business (US), Spring 81

Reviews literature on busi-ness growth, particularly as it relates to small companies; stresses the dangers of uncontrolled growth, and examines difficulties that may be encountered in a quest for diversification, Presents guidelines for questioning a company's growth process, and considers benefits a "no-growth" option might present

These abstracts are condensed from the abstracting journals published by Anhar Management Publications. Licensed conies of the original articles may be obtained at £2.50 each (including VAT and p and p; cash with order)

A fertile mind pouring products into an untapped market

MASSIMO RINALDI was one of the early Italians in the world of computers. In the early 1960s he designed what he claims was the world's first desktop computer. Some 14,000 of them were produced by IME, an electronies subsidiary of the Montedison chemical concern, "before the Japanese destroyed our market by lowering the price." In 1970 he set up a company named Insel with an initial capital of only lire 50m with his partner Franco Pesci devoted mainly to the manufacture of small com-puters, the first of which, a machine for civil engineering

design, was launched in 1970. New machines and derivations were introduced at the rate of about one a year ever since, and, while its main market was West Germany, the company penetrated the Soviet and Iranian markets by making machines that could cope with the Cyrillic and Parsi alphabets. But the machines were sold through another company, uamed Saga; Mael, as Insel became in 1979, concentrated on

design and manufacture. At the end of 1980, with Mael continuing to bring out-more refined versions of its 16-bit business computer, the company was becoming more

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involved in special products rather than off-the-peg com-puters and the relationship with Saga no longer made sense. So its exclusive contract came to an end; Saga still sells Mael computers but Mael also uses other outlets as well as developing its own marketing organisation.

Lately Mael has concentrated on selling to the very under-automated Italian public administration; ten out of 27 Italian ministries have no computers at all. Rinaldi has developed computers and terminals for the registration of residence procedure which such a feature of Italian life, and the company is

gearing up to produce machines for the automation of the postal banking system, through which many Italians pay their bills. It has won contract to automate three of the country's regions—the rest are getting an Olivetti system.

It has just been awarded a L12bn contract for ticket machines for all but the very biggest of Italy's 2,900 railway stations, and is discussing supplying the railways with portable electronic machines which ticket inspectors will carry to issue tickets on trains. This will be useful device since many Italians buy their tickets on

the train, and the range of supplements and con-cessionary rates is formidable.

In the immediate future Rinaldi has high hopes of experting his football pools system to countries like Greece and Spain which also rely on local agents, rather than on the post as in Britain. Mael will go on making business computers, possibly including a more powerful 32-bit model mindful of the fact that the 1980s should see the growth in computer use in Italy that France and West Germany experienced in the 1970s. Rinaldi will go on being both inventor and

managing director. How does he do it? Casually demonstrating the personal computer that he designed which he has by his desk (but which he does not intend to market) he says: "I used to run the whole thing completely myself. Now I delegate a lot and do more designing than management. But I will go on doing the

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Computer born in a 12th century castle Geothermalheat may

THE late Duke of Chiablese must have turned slowly in his grave. The 12th century castle he lovingly restored in the late 1870s was being used to herald an electronic vision of the 21st century.

Amid hundreds of paintings from Crivelli to Crespi at the castle of Aglie, in the beautiful Piedmont region in Northern Italy, Olivetti launched its personal com-

Mr Carlo de Benedetti, vice-chairman, chief executive and major shareholder of Olivetti painted his own pic-ture of work in the future. He said that by the year 2000 even conservative estimates suggested there would be 300m personal computers in

Market share

At the end of last month two major established European companies dived into the already crowded pool of personal computers. Britain's own ICL and Olivetti joined the founders of the market like Apple, Commodore and Tandy as well as powerful newcomers on the scene IBM. Xerox and ITT. The only other major European company with a personal computer is Philips. Its P2000 has not been a success—it blames its selling outlets, and is expected to change tactics.

Recently ICL launched its already well publicised per-sonal computer which it will sell through its newly set up dealer network, known as

CL's personal computer which will be made at its Kidsgrove

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business grow. So we've developed a non-glossy, non-

between £2,200 and £5,250. Olivetti which aspires to capture 10 per cent of Europe's personal computer market by the end of 1983 launched a rather more powerful 16-bit machine the following day...

ICL's personal computer like most others currently available is an eight-bit computer. The Olivetti personal computer Olivetti has no plans, at precosts about £2,900 which in-cludes two floppy disc drives and a low cost printer, was designed at its U.S. research in Cupertina, laboratory

California. Third party

The basic machine will start around £1,900. It will be made in Italy at Olivetta's plant in Scarmagno at Ivrea. ICL and Olivetti are joining a market which for five years was the sole preserve of small entrepreneurial companies. Last year that market changed as established companies like Xerox, Texas Instruments (second try), ITT and above all IBM began to offer per-

sonal computers. In the U.S. the IBM personal Three sections computer (also 16-bit) starts In the UK and most of Europe at \$1,500 but a typical business machine with two floppy diskettes and a printer costs about \$4,500. It is not yet available in Europe and is not expected until the end of the year, although some rumours in the industry suggest it may be brought forward slightly. Because the IBM personal computer is available in the U.S. from third party retail outlets, Sears Roebuck and Computerland, it is being

bought from shops and im-

based on the Rair "Black officially, to IBM's irritation. Box" computer and costs When the IBM personal comofficially, to IBM's irritation. puter becomes available in Europe it is likely to adopt a similar marketing strategy to the U.S. of offering the product through its own sales force, its own retail product centres and through third party retailers. However, there are fewer professional computer chains in Europe.

sent, to sell its personal computer, the M-20, through retail outlets. It will sell it directly to larger customers and is in the process in the UK of appointing a network of 100 dealers.

Mr Vittorio Levi, head of Olivetti's operations division said that the nature of the personal computer market involved a change in sales

He said new sales strategies had to be developed which were very flexible and spread over a number of distribution channels, most important of which were the indirect outlets such as sole agents, dealers and

the M-20 becomes available in the early summer and by September Olivetti hopes to have some 30 software packages available. These are divided into categories: Commercial such as typical accounting programs, Scientific and Technical, such as structural analysis and what it calls International which includes wordprocessing and a financial modelling program, a socalled Visicalc lookalike.

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The Olivetti personal computer will cost about £2,900

hopes to be selling 80,000 computers a year.

The personal computer market growing very rapidly but are the number of manufacturers. In addition to the personal computer specialists, the minicomputer companies, giants like IBM and Xerox, there is the prospect of some fiercely competitive products from the Japanese including Hitachi. Toshiba and NEC. Some early sabre rattling from

Hitachi indicates plans to sell a personal computer in the UK around early next year. launch in mind.

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BY ANDREW HOLMES

THE GOVERNMENT is presently deliberating the future of various forms of alternative energy. Whatever may be the fate of some projects in the alternative energy field it is likely that heat stored in underground rock—geothermal heat —could prove to be one of the

About 80 per cent of the earth's surface is on top of rock which is not enough to be used economically for energy produc-

The technology for extracting the heat is deceptively simple -drill two holes, connect them and circulate water through the system to produce low pressure steam at temperatures of around 200°C. But the process for fracturing rock at great depth with the necessary accuracy to connect two narrow boreholes is proving extremely difficult.

Two boreholes

The Camborne School of Mines, with a £2.7m grant from the Department of Energy, is working on a project to extract heat from the granite under Rosemanowes Quarry, near Penryn in Cornwall. The first stage involving the drilling of two boreholes 2,000 metres deep and 250 metres apart, has just been completed. Boreholes are drilled straight down for two-thirds of the way

and then deflected towards each other at a 30° angle.

connected by the natural fissures in the rock but these must be widened to create a large enough surface area to make sufficient heat available. The Camborne team will frac-

ture the rock using explosives followed by the application of high-pressure water. The explo-sions will begin in July followed by water injection in October-

Steam pressure

Once the connecting fracture has been made, water at 20°C will be circulated in the system and the researchers hope that it will be at a temperature of around 80°C by the time it returns to the surface.

If tests show that the

temperature of the water is consistent, the next step will be to drill down to depths of 5,000 metres to 6,000 metres where low pressure steam at temperatures of 190°C are expected. At such depths it is not certain whether the techniques of direction drilling borrowed

from the oil industry—can be carried out with sufficient accuracy. There are also question-marks about using explosives and pumping equipment temperature and at high pressure.

Camborne researches estimate that two or three years would have to be spent developing suitable equipment before deep experiment can begin. The complete project could take at least a decade. The two holes are already

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THE COMING need for automation systems and robots to be-able to "see what they are doing" is generating new interest in the idea of obtaining images of parts under manu-facture or test and processing them to produce data and in structions for the process. Sira Institute of Chislehurst, Kent (01-467 2636) points out that there has always been interest in equipment that will do this but that until recently, it has been either over-complex expensive, or both.

Cost effective

However, in recent years, the necessary computer processing power for image analysis has been getting cheaper so that now, according to Sira, the problem has become one of selection of the most appro-priate and cost effective system for the job.

So the Institute has launched a survey project centred on equipment selection, starting this month and due for completion within time months Participation costs £750 and more details can be obtained



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world—is at work at ICI Mond Division's salt mine at Winsford, Cheshire. Its main purpose Edmund Nuttall is to eliminate roof rock falls. Williamson Engineering.

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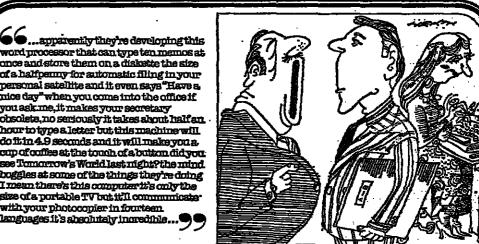
THIS £0.5m cutting machine— Fletcher Sutcliffe and Wild and the only one of its type in the the gantry designed by Robert world—is at work at ICI Mond L. Priestley of the Edmund Nuttall Group, and manufactured by another member of the Group,

> The machine is a possible answer when mining engineers have to blast underground which can, obviously, shatter

gantry is hydraulically jacked between the roof and floor to provide a rigid platform for the cutter. This can be moved along a slide to cover the full 18 metres width of the face to a depth of 4.5 metres in four

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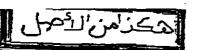
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Royal Academy

Permanent pleasures

by DAVID PIPER

While the main exhibition majestic — in pomp without condition — the show offers alleries at Burlington House, being pompous — self-portrait much pure and unadulterated galleries at Burlington House. emptied of the splendours of for who knows what splendours of the annual Summer exhibition next month, the Royal Academy stops a gap in its exhibition programme by showing a selection of its own permanent collection: the Royal Academy Retrospective. This (daily until May 23) is handsomely arranged in the Private Rooms. which will seem familiar, yet which may in fact be better known from reproductions than from a sight of the originals. for they are only rarely, in the pressure of the Academy's loan

the control of the same of the control of the contr

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the public. The basis of the Academy's collection has been provided by the gradual accumulation since it was founded in 1768, of Diploma works: every Academician is required after his election to deposit an example of his work with the Academy. Some of the most interesting, and of the most splendid, pieces however have come in other ways, mainly by gift, and of the

exhibition schedule, available 10

This selection will in turn form the basis of a touring show scheduled to rove through the U.S. next year, at venues from Palm Beach to Seattle, closing in the Britain Salutes New York" Festival in the Spring. As such it will no doubt travel as propagandist for the ailing financial fortunes of the Academy, and is conceived thus far with a marked accent, for subject matter, on the Academy's function and history. Thus it opens with those two charming but tantalising views Reypolds Queen Charlotte hang-of an Academy at work — the ing in the background, very Antique Room unconvincingly attributed to Zoffany, and the amon view of a Life School; but it is certainly no longer both are works of a quality possible to bring the Reynolds' which ought, and especially in

this context, to be readily attri-

which seems and in have been

ironed since the première. There

is an abundance of cumning

sub-principal status, bystanders

existitute a distraction, or more

precisely to remind us (while

the singers get on with the

onera) that this is a Production.

But that is faithful to the spirit

of Pag. which is in the first

nince a theatrical conceit. and

the singers manage to face down

their competition.
Since the track clown of

Leoncavallo's Pagliacci is Jon

vickers, that is hardly surprise

stage conveys dumb, baffled

power so affectingly, and as

always his performance is superbly finished in apparently

raw detail. His Nedda is Nelly

tionally effective, sturdily sup-

ported by Thomas Allen's Silvio and Dennis O'Neill's

Beppe. Only Piero Cappuccilli's

Tonio is a worthy match for

of ill-will and perversity in his music and not wasting a gesture.

Vickers, finding the lineaments

Miricigiu, lively and conven-

Nebody on the operation

so o'cusively interesting as to

village piazza of Can has a be- merely

Covent Garden

of Reynolds, acknowledging his, Japan, are being made ready and he hoped the Academy's, mentor in the form of a bust of Michelangelo, and the pair of whole lengths of the founding patron George III, and of Queen Charlotte.

These two have never been considered very successful (George III and Reynolds seem not to have found one another congenial) and are indeed cintains many treasures fairly stuffy, though grand. I lich will seem familiar, yet rather hope they will not be lich may in fact be better amongst the travellers to the States, where George III is anyway not much cherished.

Singleton's comprehensive rather later. group, however, of the academi- And there cians in assembly must surely go along. It shows the artists — ali looking self-consciously respectable — grouped about their enthroned President. That President, Benjamin West, the second in the Academy's history, held office for 28 years. and was of course an American.

The Academy, however, has a bit of a problem on its hands, as it would be a great shame if many, if not most of the paintings involved were to travel 55 exhibits here, less than half without some cleaning. In this are in fact Diploma works. paintings through a veil of old varnish with some pleasure, but the Americans prefer Old Masters to give the appearance of being as fresh as the day they were painted. Here is a firm opportunity for a sponsor to underwrite the costs of cleaning this important collection before it sets out on its ambassadorial role to the New World.

Some of the darkening is in fact certainly irredeemable-in the Singleton group of the Academicians, you can see ing in the background, very much higher in key of tone than the original alongside is now, -possible to bring the Reynolds' back safely to that level.

Which may sound discouragbutable to an identified artist, ing, not to say off-putting. But

Cav & Pag by DAVID MURRAY

Zeffirelli productions, 1959 sticated ingenuity of Leon- Alfio, Kari Nurmela, has the

vintage, lovingly revived: a cavallo's score. Better still he right solid decency (and a well-

good evening. The sets have puts a most attractive face on produced baritone), but not the evocative silhouettes, and Mascagni's much stupider music easy panache for his entrance

already a certain period flavous: for Cavalleria Rusticana. The aria; his Lola Phyllis Cannan.

the lighting makes the most of verismo libretto of Cov might suggests volatile glamour with-

them, even against a cyclo-ama have invited a score of as much out actually striking any sparks.

nitural detail — the Sicilian find in it; in fact the opera ing. Wherever a phrase con-

rillage piazza of Cav has a beliavable life, and Pag's travelling players make themselves an
ling players make themselves an
lifesco supper when the action
langs fire. In Pag a trio of
leather singing can cover the
leather singing can cover t

Conlon tapped the music for

old-festioned sweetness and

refinement - Mascagni's best

the invitation of the Royal Phil-

harmonic Orchestra to become

President-in succession to Mal-

colm Williamson-for an initial

Menuhin, who has had a par-

ticularly close association with the RPO since the days of its

founder. Sir Thomas Beecham-

undertakes his first, official func-

five-year period.

The conductor James Conlon tion in his new capacity when has the measure of the sophi-

In the sympathetic context

vein - with nice tact.

psychological detail as Jose

pleasure. Not only, for example, Constable's Diploma Work (The Boat Passing a Lock) but the exhilarating full-scale study for The Leaping Horse, and a whole set of those brilliant, small, studies of English weather, snatched down out of the passing moist moment in oils on to a sheet of paper, of which he was the unsurpassed master. No brownness, no dimness here. In one, the sky, burdened beyond bearing, tilts, and sheds in ragged sheets its water on the world. Gerald Manley Hopkins might have done it in verse, but

And there are some bril-itantly fresh portraits — Beechey's version of Prinny, George IV, as Prince of Wales, for example, threatening perhaps adiposity (chin trembling on becoming chins strapped, outrageously handsome, by silver braid into his uniform. Raeburn's irresistibly rabbit. little-boy-withsoppy.

There is Turner; there is Stubbs, in some of those rivetingly anatomical drawings of the horse. There are the Victorian exhalations of the deep sight from the sentimental bosom — Frith on The Sleeping Model, Millais (who never went to Spain) on a Sourenir of Velasquez, a little girl as succulent, not as dry sherry, but as Turkish delight. There are (thrown in as bonus beyond the catalogue's limits) stunning architectural drawings - and these surely must go with the rest to the U.S.

To see what Sir John Soane. given the chance, would bave provided for the House of Lords as habitation is alone worth the trip to the Academy, let alone Lutvens' extraordinary large-scale drawing for the Jaiour Column in Imperial Delhi, or Philip Hardwick's vision of the Euston Arch, which was realised but which we all watched being razed to but both have thus far resisted apart from an educative lesson the ground without much attention. The naked titan falls all attempts. Portraits of the in training the eye in assess honour or fuss. The furthest headlong in a collapse of huge founding fathers include the ment not only of quality but of the exhibition comes up to date rocks. The gigantic scale is

Miss Barstow rises adequately

One remembers that similar

(Handel), the role that first

phine Barstow, the Royal to the pop climaxes, and is

Opera's new Santuzza, tries to elsewhere continuously interest-

wasn't on offer, and instead Mr searching for Mascagni's bland

Conlon provides, the singers displayed his unique strengths.

reasonaly lusty Turiddu, with a Miss Barstow, but not together:

severe Mamma Lucia. The new while there's still time?

line.



urement by Henry Stacey Marks, from the Royal

bin of 1956: a tubular Spencer and a goat incised on the base, lady laying dead flowers to rest, and the whole piece expands about to slam down the corrugated iron lid with the clap of

As supreme masterpiece the Academy offers its great tondo by Michelangelo, the Madonna and Child with Infant St John. the Madonna conceived and brought to the brink of finish and there left in such tenderness as if the artist gave up the finishing in fear of spoiling it. But less well-known the diploma work of that extraordinary, but still unresurrected sculptor, Thomas Banks: his Falling Titan of 1786 commands

in the imagination to a colossal scale as one looks. It could be a modello for a monument as vast as St Paul's.

the Academy's handsome plate, and a note almost of domesticity by the folios in which are recorded mandatory gifts of silver from early members. Spoons, doubtless seem to have been the favourite. but each spoon is recorded with a fresh adjective. There is a shining, a useful, an exquisite spoon; a brilliant, an incompar-able, indeed a "green peas" spoon-a litany closing on an oddly contemporary note with "a real great spoon."

be posts supporting concentra-

tion-camp lighting. That we

are on the edge of grotesque

their own behaviour - so do

The second act is a very

mixed bag - I recall a similar

decline in an earlier Kufer

Fidelio, already worn at the

edges when it was shown at the

somehow lends

Dominion

Fidelio

Welsh National Opera's ally classical set with four free-Fidelio in the production by standing pillars that happen to Harry Kupfer of the Komische Oper in East Berlin, disliked by some (including Rodney Milnes on this page) who saw parody, even self-parody (Gerit last September in Cardiff, mans not infrequently parody Thursday. Kupfer, a prominent member of the post-Felsenstein generation of opera producers,

The second act is a is a potential master whether you like it or not. In spite of what feels like decades of exposure to studiously dreary German grey-and-black with white Brecht lighting (with in this case some Wieland Wagner chorus routines for the prisoners), I found the effect of the first act of this Fidelio

things were said more than 20 acutely absorbing.
Rarely have Beethoven's years ago of Vickers' Samson notoriously awkward Singspiel elements in the early scenes perform well, without special It was tantalising to have him appeared so well integrated with the opera's main theme. eclat. Giuseppe Giacomini is a appearing in the same bill with Rupfer achieves this with onlyuseful spivvy quality, and Eliza- won't somebody find an opera beth Bainbridge makes a cool, to accommodate them both just-controlled hysterical movement, rapier-sharp timing, and adroit exploitation of a basic-

Dresden Festival in 1978, where for an English visitor there was an incalculable factor in the Dresden public's stony-faced tension. The present treatment of Pizarro and Rocco is illuminating, but the set, with grey drapes flapping in the draught, won't do for a deep dungeon. The final deflating tableau, with the motley elements of Michael Geliot's ENO Damnation of

> Unfortunately some of producer's expertise backfired on to the musical side. Both Bizarro (Julian Patrick) and Rocco (Stafford Dean) were stronger, more interesting in spoken dialogue than in singing. Is there a dead spot in the middle of the Dominion stalls? The only voices to come over easily on Thursday were those of Marzelline (Helen Field) and, in his aria, Florestan (Dennis Bailey). The Leonora of Anne Evans was puzzling. One rarely hears the role so competently. evenly sung. One sensed

> > ROMALD CRICHTON

Fenst squashed on to one small

platform, is a mess.

is with Stanley Spencer's Dust- suggested by a minute satyr

Variety is lent by some of cheapest.

gives epic scope for nit-picking. What LWT's South Bank

ances nor exercises in 'musical appreciation." It was archive film of the composer and amplifications — quick, un-erringly apposite and utterly hold them. disarming. It is str

in funeral Venice,

film did) and spared us Robert Craft).
opinions; but three hours also He was author

Friday and Saturday evenings, us, often with splendid resourcewas neither straight perform fulness. There were ancient illuminated biography that cut poser's children, playbilis, happily back and forth between other people's music. The only " opinions " on offer and a wealth of visual footnotes solicited from friends and musicians who had a right to

The flow of images, from self-contained and self-explana- derive from Stravinsky himself idyllic St Petersburg through tory as Stravinsky's should also Europe and America to the be so specifically connected with

prehensibly clustered together at the centre-back of the stage. undivided even by the riplent boys' chorus - there was room enough to have allowed a good 20 feet of space between them, to the greatest visual as well as musical advantage.

Cleobury's direction was cap London Choral Society's per-formance with the English the instruments so meticulously Chamber Orchestra under prescribed by the composer. Nicholas Cleobury at the Nothing else adequately marks able and straightforward-plain. sensible stuff that cast little light on the finer points of the drama. The chorales especithe antiphonies, which themally, sung mounly rather last selves spring from the dialogue and uninflected, eften without nature of Picander's libretto and from which in turn springs heir end-of-line pauses, were rarely the time-transcending reflections they can be twith the single exeption, beautifully nothing else captures the magic expressive, of the very last chorale, "Wenn ich einmal soll scheiden"). The vocal quinter was disappointing: the Christus of Willard White alone found a certain colour and depth in his solo part. From the ECO players, on the other hand.

many fine solo contributions. The performance was sung in a revised version of the Novello English translation-which was another pity (a translation with the text in the programme is all kind of scheme can work perthat is needed), and another feetly well in its fashion teven dilution of authentic flavour. if there is always far less How much less effective and excuse for having too many, as more stuffily pious is "Lord opposed to too few, performers); Jesus fare thee well." than and it would have worked still Picander's robust and sohn's Bach-revival of the and it would have worked still Picander's robust an 1820s) ensembles of massed better on this occasion if the ashamedly sentimental two choirs had not been incom- Jesu, gute Nacht "!

Television

Festival Hall

Festival Hall (if you are going

for the music, St Paul's Cathedral is the last place on earth, except possibly the Grand

Canyon, in which to choose to

Any concert hall performance

of this Passion, with choirs and

instruments on stage facing the

audience, must in some respects

most especially the marvellous

antiphonal effects of two choirs

and orchestras, played by Bach at the east and west ends of St

Thomas's Church in Leipzig,

each group with its own con-tinuo and quartet of soloists.

calling and answering from side

to side.
Few performances these days

miss the point so completely as those given by the old pre-war

and thence back to Mendels-

symphony orchestra and 1,000-

fundamentally compromise the

hear Bach).

Tony Palmer's Stravinsky

St. Matthew Passion

by DOMINIC GILL

much of the great dramatic force of the Passion; and

of the colour, texture and inner

balance of the music, so meticu-

This LCS/ECO performance

adopted the fairly common com-

promise of using about one-third

again as many (and modern)

instruments, and more than

twice as many voices, as Bach

asks for (though, presumably

for reasons of economy, only

half as many soloists and one.

not two, riola da gamba). That

lously imagined.

It was tempting to try to voice choir. Most indeed make

sample all of the St Matthew a decent bow towards observing

Passions—no less than four— at least the spirit of Bach's basic

being given around London last requirements-although nothing

Good Friday evening; but can truly replace the proper

musical sense prevailed over arrangement of two widely

curiosity, and for no better separated choral groups, each

reason than acoustical prefer- accompanied by a chamber

ence, my choice fell on the ensemble of no more than

by DAVID MURRAY

Three hours of television well chosen to make unarguable out a whist of "explaining the about Igor Stravinsky could points, but more of his own music away." Granted that com-hardly be boring — I doubt that voice-over than one would have thirty hours about Stravinsky thought possible (mostly, I could be boring, so long as they think, reading from his pubstuck to facts (as Tony Palmer's lished "conversations" with

He was authentically present, then, and Palmer never weakened the effect by putting particularly by the superior weakened the effect by putting Stravinskian who doubts that him in a tententious context musical-snippets - with - pictures say, by selecting Stravinsky bits can serve any honest purpose. ternal thesis; he simply found Show gave us, divided between the necessary background for photos, interviews with old Russians and with the com-

It is strange that music so

plete performances were no part of the plan, we got a very fair conspectus of the pungently various Stravinsky sound (enough, surely, to entice many viewers to investigate more of the ventre beyond the familiar standards), aided by the stereo sound-track on Radio 3.

Occasionally a viewer might have had the impression that a work referred to on-screen was what he was hearing, which wasn't always true, but it matter. Whatever the level of one's acquaintance with Stravinsky, there were bound to be rewards among Palmer's brilliantly organised trouvailles: above all, the uncanny privilege of further acquaintance with that stubborn artist. All the virtues of the film seemed to -and no higher tribute could

was the course of his long, fascinat sity of Palmer's film, which accompanied by Stravinsky- ing life; but it is so, and Palmer achieved miracles of compresnot only the music, in snippets made that quite palpable-with- sion, lucid and respectful.

Song and Dance

by MICHAEL COVENEY

for the Theatre." In the first half Marti Webb sings "Tell Me On A Sunday," a song cycle ried Casanova. After the interdancers leap about to pretty eyes and it could be anyone, nebulous effect during a performance of Lloyd Webber's Wayne Sleep's bid to become Variations on the A-minor the Robin Cousins of classical Caprice No 24 by Paganini.

Andrew Lloyd Webber's reveals Miss Webb in its centre, credits on TV always start with double bill is somewhat pom-pously sub-titled "A Concert with a late-calling admirer. A from the Cistine Chapel — God glassy, flying backdrop becomes transmitting the creation the recipient of the picture post through forked lightning. God card projections. In addition to in this case is Wayne Sleep. her lovers, Mum back home is about a girl from Muswell Hill coyly addressed by her little girl They then all execute some not moving to Manhattan and in the big city. I am delighted very startling choreography by through relationships with a that Miss Webb, who took over Anthony Van Laast (although producer, a younger man from in the role of Evita, has been Greenwich Village and a mar-given her big stage chance. The in the role of Evita, has been voice is full, expressive and with val. Wayne Sleep and eight a fine range. But shut your

Caprice No 24 by Paganini. ballet is not a career that It is a very long time since I exerts an irresistible fascinahave sat through a more tion. The opening chords of ostentations, less theatrically Variations, familiar to South coherent evening. The curtain Eark Show watchers, had the rises on Harry Rabinowitz slid-horrible effect of persuading ing down stage at the head of me that Melvyn Bracg was his divided band in a hint of about to descend from the flies dry ice. A scaffolded truck and kick up his heels. The

who brings his corns to life I liked the blond boy who does cartwheels with no hands). including the regulation tan number and a lot of winsome coupling among the ranks. Cosmic grumbles and cheeky Sleep asides (fawlty winks, I'd call them) prove no substitution for a dramatic programme.

The orchestra churns up a fine old blare, but the Variations run out of interesting ideas after about ten minutes. mundane lyrics for the first half are by Don Black. the overall direction by John Caird.

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The concert which inaugur- longing to and with a great ates the RPO's National Appeal. orchestra in whatever capacity. will feature the great Italian tenor. Luciano Pavarotti. More than £100,000 worth of tickets

On to 1984 with Menuhin

Mr Menhain said yesterday: "Fate decreed me to be a solo violinist from the age of seven. I suppose I should be grateful

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6 Sat 5.15 & 8.30. ALEC MCCOWAN
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Yehndi Menuhin has accepted patron, the Queen Mother, to for that fortune. However, what he invitation of the Royal Phil- the Royal Cala Concert at the it did deprive me of was the company and brotherhood of be-Now, after more good luck than any single musician has a right to expect, I have received this honour.'

He will conduct the orchestra in London on May 20 and 23 commitment, yet the result was (Royal Festival Hall), and May half-frozen, almost ventriloquial. 22 (Fairfield Hall)



ROYAL COURT. S. CC. 730 1745. Prevs from There 8.0. Opens Men 7.0. Sob Ever 8.0. NOT QUITE JERUSALEM by Paul Kember. FAULER'S WELLS THEATRE. ECT. 837
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ACROSS 1 A secret gift-the French wine. a litre, put in pavilion (6, 6) 10 Got up with joint and fruit (4-3)

11 Box according to a captain (7)12 Approach an audio-receiver (5)

13 A call for help about to get the better of fibrous serpentine (8) 15 Begin with a plant producing oil for a spell (4-6)

a tin (4) 18 Two Scandinavian books in refined Danish (4) 20 The chief trend in artistic development for a select

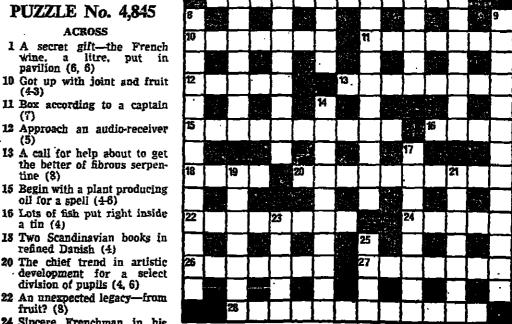
division of pupils (4, 6) 22 An unexpected legacy—from fruit? (8) 24 Sincere Frenchman in his province (5)

(3-4)27 Duck, to confine the wings of, in judgment (7) 28 Unusually rich and dense type of porcelain (7, 5)

26 Pedal part sailor returned

DOWN 2 Severe south-wind with energy (7) 3 What an anaesthetist may do

there, is converted by direction (8) 4 South American Indian I put



people in a way (10)

8 Refugee I left in river (5) 7 Barman with a gentle knock upset the rest (7)

8 Go back on a promise and shatter a weapon (5, 4, 4) 9 Doctor in an exhibition right now (7, 6)

14 Unusual pose called for the edge to be cut into curves (10)17 Pre-eminent swimmer, a

member of the Asteroidea

5 Evaluation for tax fools 19 Indicated by a sign, but not in an act (7) 21 Outgrowth

from American Indian tribe (7) 23 Stuff in a ridiculous show 25 Look applied to a rascal (4)

The solution to last Saturday's prize puzzle will be published with names of winners next Saturday.

Tuesday April 13 1982

Diplomacy to the rescue

SO FAR, so good. The extra- problem would remain the same. diplomacy being conducted by Mr Alexander Haig, the U.S. Secretary of State, between and Buenos Aires tine claim could be revived. seems to be working—at least to the point that there is now a greater awareness in both Britain and Argentina of the focussed on a more durable need for a negotiated settle- settlement. The Security Counment of the Falklands dispute. cil at the United Nations has

Other countries, too, have been helpful. Peru has proposed a cooling off period while negotiations continue. The European Community has excelled itself by agreeing to a ban on Argentine imports and a halt to arms sales which, at the very begin-ning of the dispute, Britain never even dared to ask for. European solidarity is not always a chimera—a fact which the British ought to remember in future relations with the

Realisation

The main point, however, is that with the aid of the U.S., tempers seemed to have cooled. It is entirely welcome tha the U.S., which has more than a foot in both camps — Europe and Letin America, should have behaved in such a faashion. It is a long time since a superpower has shown such responsibility in seeking a peaceful solution to an international dis-

At the start, there were two nationalisms: Britain's and Argentina's. The danger was that they would feed on each other to the point where armed confrontation became unavoidable. Yet now the realisation seems to have dawned that the dispute is a complicated one not jue the result of naked aggression, though the Argentinian invasion was certainly that, but also the product of a longstanding historical anomaly.

The Falkland Islands were. indeed are, British. But it had been clear for some considerable time that Britain lacked the ability to defend them against a nower with counter-claims, however dubious, and which was in any case so much nearer: hence efforts of the Foreign Office over the years to reach a diplo- is much better than the shootmatic solution before the debacle occurred.

If the British were to reoccupy

At some stage, the Royal Navy would have to return to more familiar waters and the Argen-

It is the merit of the international diplomacy now going on that attention is being been used to good effect. Resolution 502 did condemn the invasion and called unequivocally for withdrawal. The Argentine regime appears at least to have taken note, as well as to be heeding the entreaties of Mr Haig. And, in truth, the regime must know as well as anyone else that theer are all sorts of other sanctions that could be thrown at it. The country's economy is in too parlous a state for it to risk total international isolation.

Yet if Argentina seems to have backed down slightly, in time there must also be some movement from Britain. It is no use seeking to return to square one and staying there. The status quo ante has been shown to be untenable. The British are right to go on pressing for an Argentine with-drawal, as the Security Council Resolution demands. But they would also be wise to start discussing ideas of trusteeship, shared sovereignty or any other variant with Mr Haig, the Organisation of American States or any relevant body.

Parliament

The decision to recall Parlia ment this week is correct, if only so that Members can be given a account of the state of play which is substantially different from the end of last week when it went into recess. It was notable even then that the mood of MPs was markedly less bellicose than in the first emergency debate on the Falklands on Saturday, April 3. We would hope that it will now have cooled down even further.

Any right-wing Tory MPs who resent the American intervention should be firmly squashed by the Prime Minister. What has happened is that diplomacy is being given a chance. That ing war which, though it still cannot be ruled out, looks rather less likely than a few

Reviving the inner cities

economic problems in Britain's tee to persuade a company to inner cities stretch back 80 or more years; it is unrealistic to expect them to be solved overnight or even within the lifetime of one Government.

That could be no justification either for doing nothing or for continuing unchallenged the pattern of previous years, which has mainly involved throwing large amounts of public money at the problem without achieving any noticable halt to the decline. If there were ever any doubts about that, last year's urban riots dispelled them once and for all as Lord Scarman's unambiguous report later under-

Although the Cabinet was shaken by last year's events Mr Michael Heseltine, Environment Secretary, seemed to be the only minister to perceive the extent of the problem and the longterm dangers it posed. The issue became his over-riding concern, replacing both the complexities of local government finance and the challenge of trying to introduce modern management tech-niques into his enormous department.

Improvement

So now, a year later, it is not surprising that while the Cabinet collectively has no answer to the charge that not much has happened Mr Heseltine individually can claim that he has sown a number of seeds which should provide some longterm improvement.

The main initiative, announced last week, is a scheme of urban development action grants (UDAG) inspired by, and closely modelled on, the U.S. system. It will, as guaranteed in a vital paragraph bursed in the talking to the private sector Budget statement, provide £70m and preparing schemes immeof new money in the first year for projects within the 43 most deprived urban areas. But it will no longer be money freely handed out to be poured into more public-sector schemes.

The money will be available only for local authority schemes which have already attracted a commitment of substantial 1981-83 indicate that councils funding from the private sector. are not always able to act This makes the UDAG funds quickly on capital schemes. "persuasion" cash — money which might tip a commercially unviable project into viability It is now up to the institutions or might provide enough of a and local councils to respond boost through a soft loan, with the same sense of urgency.

THE ROOTS of the social and interest rate subsidy or guaranwhich it would not otherwise contemplate.

> This initiative, which is radical move away from traditional British approaches, is welcome. All credit for it goes to Mr Heseltine's Financial Institutions Group (FIG), his 25 managers on secondment for one year from leading banks, companies and institutions.

Answers

This is only the first of a number of FIG initiatives in the pipeline. The group has been working industriously, knowing how heavily the nation was relying on it to find new answers to intransigent problems. More proposals on housing, small firms, development and the active involvement of institutions in inner city projects are awaited.

But a number of potentially serious difficulties appear to be looming.

A major objective of FIG's creation was to examine closely and critically the role of the institutions themselves and to try to find ways of involving them in tackling a national problem. But there are signs that some institutions, having seconded members of their staff to FIG, are reluctant to involve themselves more directly in the inner cities and are even resisting some of the FIG proposals.

Another possible difficulty is the attitude of local authorities. The Government wants bids for UDAG money by September so the grants can roll into cash flow at the beginning of the financial year next April. This means councils must start

Urgency

The slow response to a similar scheme for derelict land grants-another form of UDAG —and the remarkable level of underspending on the local authority capital account in 1981-82 indicate that councils

Mr Heseltine and FIG are playing their part to the full. U.S. BUSINESS CLIMATE

A downturn with a difference

By Richard Lambert in New York

THE WARNING SIGNALS

IRST IMPRESSIONS are often dangerous. But after it is difficult to ignore a feeling of deep foreboding within the business and financial com-

This stems from the fact that the present business cycle is unlike its predecessors in two obvious respects.

The first is that despite the low level of ecenomic ectivity, real interest rates stand close to their post-war peaks. At a time when the underlying rate of inflation is running at about 7 per cent a year and falling, the prime rate stands at 16.5 per cent and long dated Treasury bonds are yielding over 13.5 per cent.

The second big difference is that the corporate sector is in a frail condition to cope with a ight squeeze on profits and cash flow. By almost any yardstick you care to use, a prolonged period of deterioration has left companies' key balance sheet ratios in a worse shape than at any time since the war.

Such a combination is deeply unsettling for U.S. businessmen, and seems to be over-riding the one unequivocally good piece of economic news in recent months - the sharp slowdown in the rate of inflation. Net finance costs are gobbling up about one sixth of the company sector's pre-in-terest profits at a time when selling prices are coming under increasing pressure. The result has been a sharp increase in the rate of business failures. to the highest leve! in 20 years. During a period of rapid price

Large companies plan to scale down capital spending

inflation, it made sense for com-panies to borrow heavily. It seemed a paintes, way to inrease the return on shareholders' funds, since the falling value of the dollar meant that the real co.; of the loans was negligible. So it was that in the six years to the end of 1981, the total debt of nonfinancial companies in the U.S. roughly doubled, while the proportion of short-term lightlities rose sharply.

But now the position has changed with a vengeance — which helps to explain a view widely held on Wall Street that movements in the cost of money during the next few months could have a critical impact on the long-term future of wide swathes of manufacturing in-dustry. If these were ordinary times, it would be reasonable to argue that the tide of recession was now lapping somewhere around the low-water mark — with scope for a marked upward surge in the second half of this year. After a three-year silde, the number of housing starts seems at last to have hit rock bottom. Motor car sales still look dreadful on year-to-year comparisons, but

spending is rising as Dow, Caterpillar, or Weyersharply, and there is a tax cut haeuser — which coming on July 1 to help stir consumers into action. traditional cycle this is just the point when credit conditions should be at their slackest and, with an upswing in business activity and profits in view-share prices should be surging. But look around. A mortgage

costs you 16 or 17 per cent at a time when house prices - at the space of six months. best — are not rising. Half a dozen important companies in several different sectors of the economy are in dire financial difficulties, and no-one would be su: prisen to see a few major bankruptcies in the near future.

CONSUMER

PRICES.

The farming sector, is flat on its back, with the purchasing power of farmers down to the lowest point since the 1930s. The savings industry is in a state of turnoil: the savings and loan associations, which are mainly involved in making residential mortgages, are currently losing money at an annual rate of \$60n, which is equal to about one fifth of their combined net

Far from taking an increasingly hopeful view of profits, Wall Street is busy revising its forecasts downwarder. Lynch, Jones and Ryan, a broking firm which tracks the work of about 60 brokerage houses, says that more analysts marked their forecasts down in March than at any time in recent years and their figures may still be able after what is likely to have been a grisly first quarter. Tentative forecasts for 1983 imply a profits rise of nearly one fifth next year, which also looks a bit hopeful.

A good old fashioned business upturn looks increasingly unlikely. A feature of the last have shown more stability in few weeks has been the num-recent months. The level of her of large companies — such

approunced plans to scale down their capital spending in a big way. The Department of Commerce's quarterly survey has already shown a sharp fall in the rate of capital spending planned this year compared with earlier expectations. The backlog of orders in the machine tool industry has fallen by nearly 30 per cent in

RATIOS FOR

NONFINANCIÁL

BUSINESS

CORPORATIONS

For similar reasons, manufacturers are unlikely to start As a result, no one now see rebuilding their inventories to to expect anything but

any great extent in the present climate. When money is expensive and input prices are falling, stockbuilding makes no sense. The latest survey by the

CAPACITY

UTILIZATION

National Association of Purchasing Management shows that the proportion of members reporting falling prices is the highest for 30 years. And the number which are only prepared to commit themselves to buying no more than 30 days forward has also risen sharply, in this case to a nine-year high.

anaemic recovery economy during the latter part of this year. The kind of numbers you hear most frequently on Wall Street indicate a fall of about 4.5 per cent in gross national product in the first quarter of 1982. That might be followed by a very modest rise in the second quarter as destocking runs its course, and

1920 '30 '40 '50 '60 '70 '80

Per 10,000 Listed Concerns

BUSINESS

FAILURE:

RATE

by a gain of maybe 4 or 5 per cent in the second half of the The real worry is about 1983. Without a worthwhile fall in As a result, no one now seems real interest rates, there seems every chance that recovery will splutter out and die in the

early part of next year. So why are interest rates so high? The stock answer is that the Administration's monetary and fiscal policies are in direct confliot with one another — the one restrictive and the other "By all the rules of the game, interest rates expansive. The result is a high degree of uncertainty about the financial outlook over the medium to long term, which in turn has been reflected in the

cost of short term money.

The continued demand for credit by companies - which must reflect at least partly the credit squeeze on their cash flowshas surprised many forecasters. And with the long term bond market more or less closed down in current conditions, this demand for money has been heavily concentrated at the short end of the market. Pre-dictably enough, Wall Street

The subject to which all con-

soon. The hawks say they will only be satisfied with a "two-digit deficit"—less than \$100bn—in 1983, which could mean shaving the present number by

\$50bn or more.
Others argue, probably more realistically, that what is needed above all is a change in direction — a credible set of numbers that would point to steadily falling budget deficits

in the years to come.

As things stand, estimates seem to rise by a few billion seem to rise by a few billion almost every other day and there is an uncomfortable feeling that fiscal policy might be suppring out of courrol.

Some form of budget compromise will presumably be worked out in the quite near the future.

worked out in the dutte lear future. In an election year, the shape it takes will depend on how far the pain of reducing planned spending programmes or increasing taxes is seen to be outweighed by the need to do something about the crippling cost of money.

pling cost of money.

There is certainly a sense of urgency in the air. Some industrialists and bankers go as far as to suggest that irreversible damage will be done to the corporate sector if interest rates are not brought down in the next couple of months.

That sounds too cataclysmic. What strikes the European visitor, perhaps above everything else, is the sheer size and spread of the U.S. economy. Problems that might appear devastating at home can be absorbed here

without too much damage.

However, political decisions in the next few months seem bound to have major repercus sions on the outlook for

Fiscal policy might be slipping out of control

economic growth in 1983 and beyond. And until they are taken, the financial and tousi-ness picture will remain cloudy. In the securities markets, some of the bolder souls are beginning to talk with more confidence about the case for long-dated bonds — which would be overwhelming if it was clear that present trends in inflation could be sustained. But there is still a great deal

of uncertainty in the equity market. Shares yield about 6 or 7 per cent, way below the going rate on bonds. And given the present outlook for prefits and the poor financial condition of so many companies, the scope for dividend growth over the next year or two may not be all that great. Indeed, more companies passed their tightening on the fiscal side. dividends altogether last month Indeed there are those who than at any stage in the last argue that a more accommodating monetary stance by the kicked off with the mighty for the standard standard for the standard forms. ing no payment to shareholders for the second quarter in a row. As one veteran of half a

dozen business cycles put it last The subject to which are the versations return at the moment is the need for a gets real thick. The trouble is that this time the gloom is real

should be down around 9 or 10 per cent.'

"I consider the proposed budget to be not a

What they're saying

blueprint for recovery but a recipe for even greater disruption in our economy and financial markets." -John McGillicuddy, chairman, Manufacturers Hanover

"My instincts tell me there will be one or two large corporate failures." --- Malcolm Baidrige, Commerce Secretary

"If the Fed does anything different from what it is now doing, it will abort what we're now engaged hopes that the present policy too mgn. On average, brokers continue to project a modest in. If it prints more money the rates are going to conflict will be resolved by a rise in overall earnings this year — which seems improbable effort with the present policy conflict will be resolved by a tightening on the fiscal side. Indeed there are those who sale effort with the present policy conflict will be resolved by a tightening on the fiscal side. -Walter Wriston, chairman, Citicorp

"There is only limited time left. It is a difficult. Federal Reserve Board would Ford Motor Company announce task, to say the least, but delaying will be dangerous since it would be taken to sigin terms of financial uncertainty and economic nal the end of the fight against uncertainty."

-Dr Henry Kaufman, Salomon Brothers, on the need to cut the budget deficit

Men & Matters

Air power

Why has the mighty Racal-Decca taken the trouble over the Easter weekend to take expensive Press advertising to promote an obscure piece of hardware, namely a new navigational device for yachtsmen?

The answer lies in a dispute between the two European elec-tronics giants Philips and Racal-Decca. They are provoking each other by action and counter-action — and in Racal-Decca's case by added threats of resorting to the law. The rumpus is over the use

of radio transmissions which can tell yachtsmen and fishermen at sea exactly where they are whatever the weather. Since taking over Decca, the Racal-Decca group handles the Decca Navigator system which has been popular with commer-cial shipping for 35 years.

Decca made it a money-spiner by a strict policy of refusing to sell the receivers. They have been available only through rental arrangements for about £1,000 a year apiece.

Now, however, an abrupt change in policy has occurred at Racal-Decca. It has rushed on to the market its new small receiver for yachts and fishing boats which will be sold outright for £1,500. It will be surprising if a number of commercial ship-owners do not also take advantage of the new set in preference to continuing their Still together rental arrangements.

is thought to be reacting quickly to a threat from the rival com-pany Philips. The long Decca monopoly has been upset by Philips having one of its subsidiaries in Copenhagen make and sell what is called the AP Navigator. That little gadget, the size of a couple of shoeboxes, spells out latitude and longtitude. And how does it do it? Why, it listens in to the Racal-Decca stations.



"Just keep away from TV, few days—you've got a had case of Jingoism."

Racal-Decca cannot sue all users of its air waves because some of the transmitters sated in Europe are under the control of host governments. But the group does intend to take legal action against anyone using what it calls "unauthorised equipment" to pick up its radio transmissions inside British territorial waters.

Racal-Decca is not changing a Officials of the Irish Justice successful policy on a whim. It department have been having a legislative spring clean. And among the flotsam and jetsam which has turned up is, sur-prisingly, the Act of Union of 1800 which merged the then kingdoms of Great Britain and Ireland.

It seems that in spite of Irish independence in 1922, and the declaration of a republic in 1949, nobody has actually got round to formally abolishing the

The Act's end should be into the time students can make easier than its birth. The Irish available for job interviews.

Parliament of 1799 had to be Never a place to take itself Parliament of 1799 had to be cajoled, threatened, laden with patronage, and outrightly bribed, before it could be per-suaded to wind itself up for good. On the other hand the Dail is expected to revoke the Act without so much as a speech —never mind a division.

Chain reaction

The Forester chainsaw attachment-it can convert the dead elms lying round your estate into planks—was reported on the FT's Technology Page on March 23.

Two days later Mr Visram. managing director of the manufacturers 'phoned the FT.
"Help," he said, "Our switchboard can't cope." "Neither can we." said the

and the Tech Page secretary, as reader's inquiries rolled in. Mr Visram 'phoned again. "I'm getting calls from Madrid, Canada, Finland, Sweden, and Norway". "How do you do it?" "A trade secret" said

FT switchboard, the FT library,

the Tech Page people. They tell me that one item printed last October resulted in sufficient orders to keep a small company going until next August.

Cool Harvard

They are turning down the heat at the Harvard Business School. The number of hours spent in class by first-year students is to be cut by about 15 per cent and the work-load second-year students will also be pared.

The school says that pressure of work has built up in recent years to a point where it has begun to affect the quality of students' output. More to the point perhaps, it has also bitten

anything but seriously Harvard examined how its programme had changed over the years and found its number of pages of assigned reading had climbed by 79 per cent to 9,813 pages between 1958 and 1980 and its students were working far longer hours than at other U.S. business schools.

But Harvard does not want anyone to think it is turning itself into a health farm. Its workloss will still be far beavier, I am assured, than at rival tycoon hatcheries. "We haven't made it easy for them," said one academic. "We've just changed it from the impos-sible to the hard."

Wham

During the Falklands emergency a special Cabinet committee responsible for maintaining national wit, humour, and morale (WHAM) is looking for support. I will provide an extra chuckle ration for this one day only. • The Birmingham Chamber

of Industry and Commerce is advertising a semin on Export Opportunities in Argentina. "Methods of entering the rearket" will be explained— by amphiblous assault craft, I

• From Dublin comes the tale of the man who told his parish priest that in six weeks he had lost £1,000 on the horses. "Every day I went to St Patrick's church and prayed for guidance." he said, "but still I lost." "St Patrick's?" said the priest. "You fool! That's the one for flat races."

• In a City cafe: "I know she's got three good A-levels, Angela. but I think Mr Willis took her on because of her two good eye-

Observer

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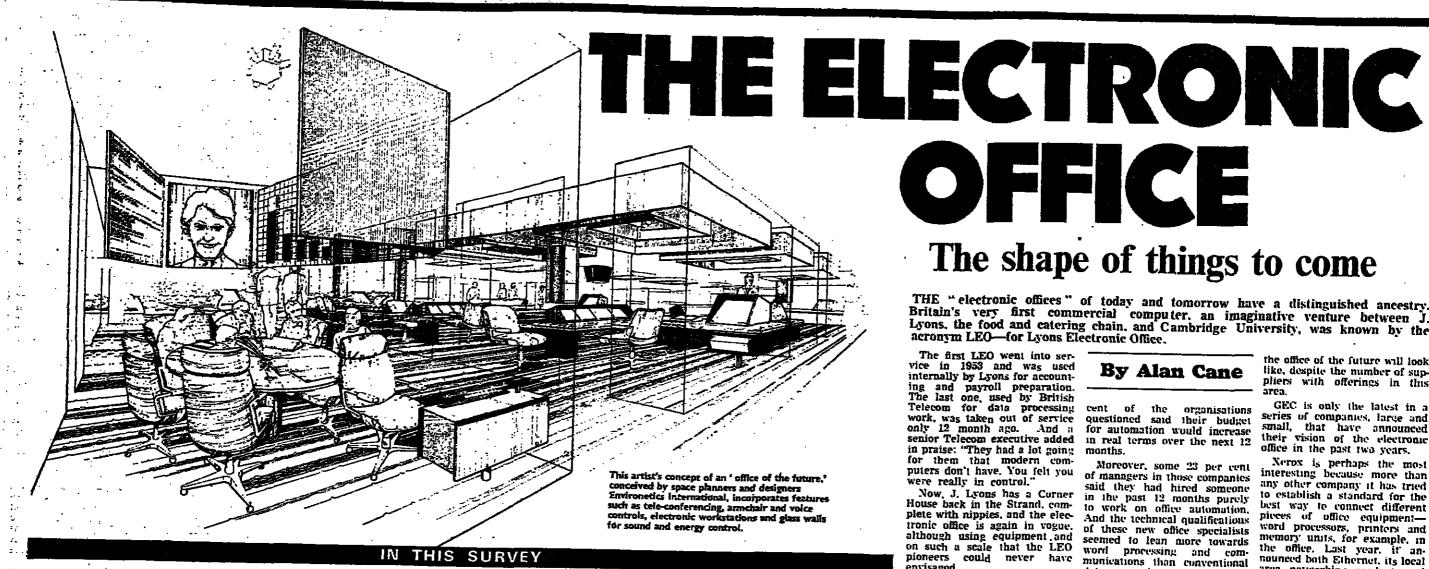
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Tuesday April 13 1982



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Word processing: breaking down barrie	.—	Facsimile equipment: offic
		Dictation equipment: small
Business communications: era of prochange now under way	ofound III	Centralised dictation syst
Data storage: capacity increases	īV	Case studies: looking h
Data retrieval: cost-effective methods	īv	factors
Software: secret of the best system	7	Telephone terminals: more
Screen technology: latest advances	<u>vī</u> .	Mobile communications: gr
Printers: advent of laser systems	VI	Copier market: the fight i
Video-conferences: many advantages	VII	Optical readers: latest deve
PABX: rapid metamorphosis	VII	U.S. market: dramatic cha
Computer usage: new input methods	VIII	Japanese producers: rapid
Automated mailing: working at speed	VIII	UK market: campaign for of information technology

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Local area networks: £1bn business	IX
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The shape of things to come

OFFICE

THE "electronic offices" of today and tomorrow have a distinguished ancestry. Britain's very first commercial computer, an imaginative venture between J. Lyons, the food and catering chain, and Cambridge University, was known by the acronym LEO-for Lyons Electronic Office.

The first LEO went into service in 1953 and was used internally by Lyons for accounting and payroll preparation. The last one, used by British Telecom for data processing work, was taken out of service month ago. senior Telecom executive added in praise: "They had a lot going puters don't have. You felt you were really in control."

Now, J. Lyons has a Corner House back in the Strand, complete with nippies, and the electronic office is again in vogue. although using equipment and on such a scale that the LEO on such a scale that the LEO word processing and com-proneers could never have munications than conventional

envisaged. LEO was a data processing computer-it was described as an electronic office because the work it did used to be carried ing a new kind of office hier-out in offices before financial archy. There is a growing political constraints banished the computer to its own ivory lower, the computer a new unity about many of the centre, complete with its own traditionally distinct office serattendants, the data processing department

The present enthusiasm for electronic office systems is simply the latest stage in the gradual redistribution of computing power out from the computing centre to the operating divisions of an organisation.

honest, most of the enthusiasm systems overlord with a number is to be found among manu- of line managers looking after facturers and suppliers, while their customers watch care- sing. mail services, telecomfully, but in the main, refuse to commit themselves.

Nevertheless, the pace is quickening. In a study of Office Automation in the UK. undertaken by the consultancy difficult to predict exactly what technology, Urwick Nexos, some 67 per

By Alan Cane

organisations questioned said their budget for automation would increase in real terms over the next 12

Moreover, some 23 per cent of managers in those companies said they had hired someone in the past 12 months purely to work on office automation. And the technical qualifications of these new office specialists seemed to lean more towards data processing.

The coming of office automa-tion seems, in fact, to be creat-ing a new kind of office hierrealisation especially in the larger companies that there is vices. With the coming of word processing and electronic mail, for example, it becomes less easy to see a distinction between typewriting services, mail services and tele-

communications. The trend, first identified by Mr Ronald Yearsley of the BIS group, is to the establishment Frenetic enthusiasm? To be of a new corporate post, that of word processing, data proces-

munications and printing reporting to him. What sort of systems will this new species of corporate animal have in his charge? It is very

the office of the future will look like, despite the number of sup-pliers with offerings in this

GEC is only the latest in a series of companies, large and small, that have announced their vision of the electronic office in the past two years.

Xerox is perhaps the most interesting because more than any other company it has tried to establish a standard for the best way to connect different pieces of office equipmentword processors, printers and memory units, for example, in the office. Last year, if announced both Ethernet, its local area networking product, and Star workstation, an advanced terminal for execu-

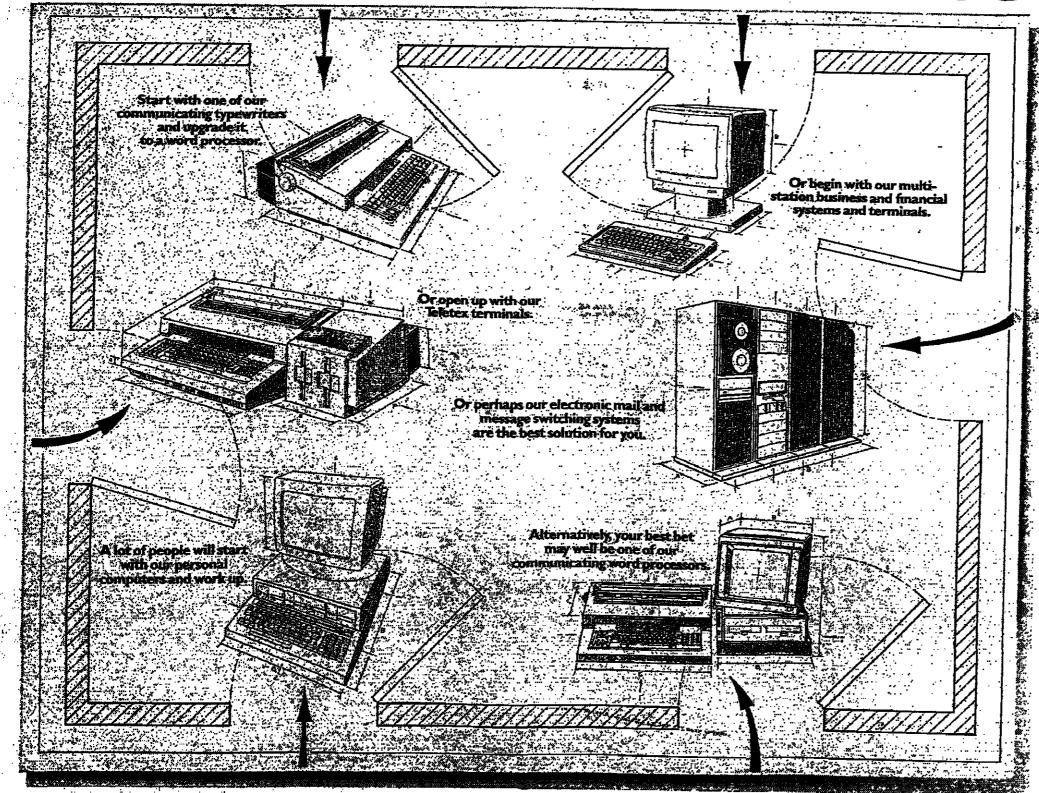
Xerox has been working on these products, and others that interface to them, for the past 10 years.

Wang, a U.S. company which. through a mixture of sound electronics and imaginative marketing, has had dramatic success in word processing, launched new and advanced products which promise the fast and efficient distribution of text, image and voice.

Burroughs launched "Ofis 1." a collection of office products. Data General released new software and improved terminals for the office. Office Technology launched a system which enabled its customers to attach voice "notes" to typewritten text. ICL and Sinclair announced they would work together to produce a tiny telephone terminal with a display based on Sinclair's flat screen

CONTINUED ON PAGE XX There are many ways into the electronic office. Choose a door. Any door. It doesn't matter where you start. We build our systems to work together. So begin with the one you need now.

by Philip Hunt.



So begin with the one you need now. Then add to it.

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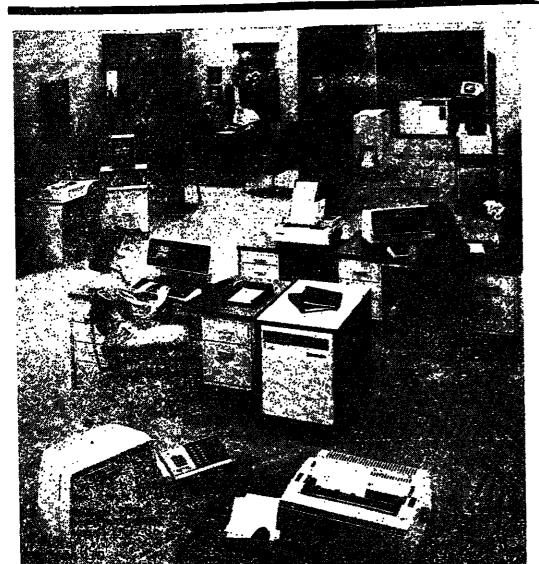
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mline LL:



In this office information system, the Burroughs OFIS-1, the components are engineered to fit the individual needs of managerial and clerical departments



The above office information system, OFIS-file on-line electronic file/retrieval system. Workstation multi-purpose terminal. Desktop printer. Word processor. Shared printer with sheet

feeder. Word processors. OFIS-terminal executive inquiry/display station. OFIS-reader page input station. OFIS-director communications/ control processor. ' Dex ' facsimile station.

When the right mix is important

Aid for managers

This means that managers

and calculations. When they want to transmit the results of

their work to someone else

they simply send it down the

network which connects all

other small computers and

Companies such as Xerox has

opted for this network approach

while Xionics a small successful

computer controlled network.

In its approach to the cle tronic office, Britain's ICL illustrates that its possible to

combine approaches. Tradi-tionally a company which has produced larger office com-

puters, it now also offers small

computers for managers' desks and word processors plus a

host of networkable office pro-ducts including voice and text

handling equipment.

For example, large companies
may have engineering laboratories where it needs a small

computer terminal capable of

office equipment together.

panies argue that it will be the exchange which is the core hecause it provides the link between equipment, while comthe use of computers, microelectronics and telecommunica-tions to help us store, obtain and send information in the form of pictures, words and puter companies say the comnumbers more reliably, quickly and economically." of the electronic office.

When computers were moved into offices in the 1960s, companies opted for large and fast systems because to justify the cost of such computers they had to be used for processing information in large quantities as quickly as possible.
This precluded their use in

all but the largest organisa-tions. Since then, the development of minicomputers and microcomputers has given can have small personal comoffices relatively low cost but
extremely powerful computer
help them with their planning tools which can sit on an office and calculations. desk, rather than have to be enclosed in air-conditioned

As Alan Cane points out in the introduction to this survey. one of the first applications of computer in the office was developed by Lyons, the com-pany fondly remembered for corner teashops around London. Lyons produced its "Leo" (for Lyons Electronic Office) computer system in the first half of the 1950s. This was used to take in daily orders from the teashops to provide better stock control of food and speed up delivery services.

Since the beginning of the 1970s, there has been a trend away from large computers like Leo in favour of distributed systems which put more compuling power in the hand of the user at his desk rather than concentrated through a central

The cost of providing such power has fallen with the de- data processing centres where creasing cost of microelectronics large mainframe computers are which has also been coupled employed, and regional offices

IT IS unlikely that any office of with the shrinking size of com-the future can avoid using the puting systems but increased computers for routine office

All sizes of computer will have a role to play in the office of the future

tomputer in whatever guise, in some aspect of its operations.

The British Government's moment can whether it is the mainframe computers was moment computer or the electronic computer or the electronic telephone exchange which will be the heart of the electronic be the heart of the electronic industry observers felt that mainframe computers was mainframe computers was momentoring these large networks. For many years, some industry observers felt that mainframe computers was mainfra would become obsolete in all but research and defence applications because of the growth of the powerful small computing systems.

puter is the central wait because Developments at IBM tend will co-ordinate the activities to back up the concept that these large systems still have growth potential. Last year.

IBM announced a computer On the other hand, some companies believe that neither the exchange or the main com-puter is necessary and bits of based system designed to record, store and forward vocal electronic equipment can be connected together by a local area network. messages which could have an influence on the development of electronic office systems.

IBM's system turns the human voice into binary digits, the language of computers, and records them on magnetic memory disc.

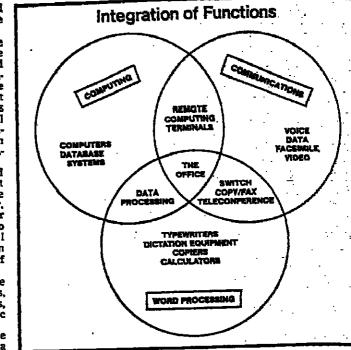
It has been possible for some

time to store and forward data messages through data and messages systems, but voice storage requires much more complicated and more powerful computing systems to handle it. Eventually, this could lead to

a device which could allow the user to dictate into a microphone and obtain an instantaneous typed transcription. George Orwell in his book British company has chosen a

the office of the future whether 1984" called it Speakwrite. IBM researchers have already personal files, message storage achieved some success in this or diaries, controls the flow of field but have to use a very information through the office large computer indeed or handles and manipulates large amounts for information any accuracy transcription.

for payrolls and accounts. In conclusion, then it must be assumed that all sizes of computers will have a role in Elaine William



Fears that the machines might cut down jobs have now gone

Word processors break down the barriers

stand alone operation but backed by a larger computer WHEN WORD processors first came onto the market, secretaries and typists tended to regard the machines in the way the Luddites regarded the steam engine — as a major threat to their livelihood.

However, the fears of mass automation has been largely unfounded. Word processors are rapidly gaining acceptance as a tool which can remove a con-

repetitive tasks.
In fact word processors are likely to be one of the most forecast over the next five years.

These systems, which are in essence, sophisticated electronic typewriters, are generally con-sidered to be the route along which companies will make the transition to the complete electronic office, thus reducing the amount of papers shuffled within companies' walls.

There are more than 100 different models of word processors on the market. This figure excludes the software packages sold by computer companies which onships microcomputate, and larger computer eveloms, to have the extra facility of word processing.

ket range from office enginment specialists such as Lanier Dictaphone and Rank Xerox to electronic envipment companies such as AES. Wordplex and AM Jacquard and software and computer companies such as ICL, Logica. Wanz and large multi-nationals such as IBM, and

Though the market is dominated by U.S. companies — in 1991 they accounted for about 80 ner cent of sples — British companies seem to have fared heiter than most Furanean manufacturers by estining a greater hold in this competities

So far, the UK commanies such as Logica have been able to match and even achieve superiority in terms of technical specification and low cost then some U.S. companies. turning the Japanese language into digital signals for digital ing on a television screen. Japan has not made great intoads into the word processing market vet. Rut the notential of the market s too large for the Japanese to be deterred by such a barrier. and they are likely to be a formidable force in future.

first introduced to the market. there were fears that they would cause large-scale memployment in the office because of the greater productivity manufacturers claimed for their goods. Experience has shown that this is not necessarily the case.

Such systems come into their own in that the skills of secretaries and typists can be used more productively, containing the rising costs of preparing reports and business corres-

Savings in time and costs can be significant since many lengthy documents have to struggle through several stages of alteration, correction and retyping before they are ready for distribution.

Word processors really come into their own where a large

ports are produced. Computer type memory storage facilities available on many machines mean that hundreds of personalised letters can be produced at very high speed.

Such equipment can either be unemployment through office used singly as a direct replacement for a conventional typewriter or connected into a network to allow communications between machines to provide siderable amount of office new services such as electronic drudgery by carrying out boring. mail and common information

The demand for communicating word processors is likely to active areas within the elec-increase as the cost of such units tronic office equipment market. fall. The growth of this with an average growth rate of concept is hampered by the fact more than 20 per cent a year that it is still difficult for one manufacturer's word processor to talk to a rival machine.

> tied into a word processor network, become particularly attractive to companies when office sites are already linked by leased telecommunications lines for voice, message or data systems. Many large companies operate such systems. Out of office hours, when such expensive lines usually lie idle, they could be used to transmit intra-company mail at little extra cost and save on conventional mail bills

between offices. Many office equipment com-panies believe the way to attract companies towards the complete Those competing in the mar- attacking the market at the bottom end. This is by encouraging the low volume user into buying slightly more sophisticated electronic typewriters as a first step towards full word processing.

These machines usually have one line displays plus a measure of word storage in the form of solid state memory display. Progressing further up market are the so called thin window units which have improved displays showing several lines of text plus a larger word store usually in the form of disc.

The full-screen hased wordprocessors are really intended for applications where a con-

layout revision is needed.
Typically such machines display from 24 to 69 lines of text. each line comprising between 80 and 96 characters with facilities for horizontal and vertical scrolling -moving the text up or down as in film credits or from side to

Over the past year or so prices of word processors have fallen dramatically. A full-screen based machine now costs around £4,000 and manufacture is still dominated by the U.S.

Typing pools

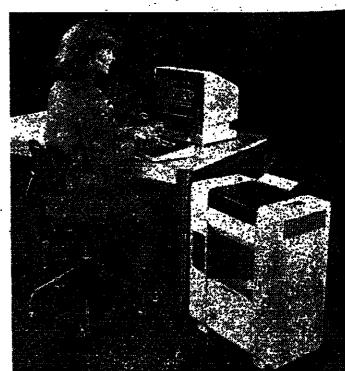
Besides the stand-alone word processors are the shared logic systems. Essentially these are word processors which can operate individually but share a common memory computer sys tem. This is for use in such Electronic mail systems, when places as large typing pools where work needs to be dele-gated to individual machines and progress monitored.

The cost of such a system prohibits their application in all but the largest organisations. For example, Wordpley has sold several of its smaller shared logic systems to Marks and Spencer, London Electricity Board and several building

At Marks and Spencer, the system is mainly concerned with eparing and up-dating specification projects and manuals for the company's computer department which prepares 15,000 pages of text a year.

With so many companies in the market and the recession affecting capital equipment expenditure, it seems likely that the downward price trend will continue. Some of the less competitive companies will drop out of the market through sheer weight of competitive numbers.

A number of users tend to rent machines rather than buy outright, simply because they are not sure if they have chosen the right machine or that it will fit into the present or future planned office organisation.



The keyboard and display screen of the multi-function Wanguriter word-processing system (above) are moveable and the printer is quiet and compact. The Wangwriter's document-handling capability has been extended from 15 to 75 pages

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Towards the total system.

Guy de Jonquieres looks at the revolution in business communications

Era of profound change now under way

stations.

FOR MOST of this century, voice has been the dominant Office (Bundespost) is striving are much more reliable, flexible form of long-distance communi- to transform itself into a and versatile, offering facilities cation for business and residential subscribers alike. In most parts of the world, telephone communications have to shake off its previous image been provided by monolithic as a slow-moving public ultility organisations, enjoying total or by marketing more aggressively virtual menopoly powers, whose principal objective has been to new types of service. offer a uniform standard of basic service to as large a proportion of the population as

This state of affairs is starting to change rapidly. Spurred by the growth of computer networks, demand for data communications is now outstripping the increase of "plain old tele-phone service." And the structure of the telecommunications industry is itself undergoing a major upheaval, as previously entrenched empires are con-fronted by new competition.

• In the U.S. American Tele-phone and Telegraph reached an anti-trust settlement with the Justice Department earlier this year requiring it to dispose of its 22 local telephone operating affiliates. This means that AT and T will have to compete on more nearly equal terms with the smaller companies which have been chipping away at its long-distance business

over the past decade.

In exchange, AT and T has been freed of previous restrictions on its entry into the booming market for "enbanced" "value added" services, which combine communications and data processing. Many industry experts foresee a battle for this market between AT and T and giants like IBM and Xerox.

"Value added" services are those in which the original message transmitted is in some way changed. Examples include computer networking, electronic mail or electronic banking.

OIn Britain, the Government's liberalisation policy has re-moved British Telecom's monopoly over the supply of subscriber equipment and communications services. British Telecom must now compete with private sector rivals in these fields. A consortium headed by Cable and Wireless has been licensed to build and operate an independent national communications system designed to serve the needs of larger business

● In West Germany the Post As a result, digital exchanges roofs or in company car parks.

In West Germany the Post As a result, digital exchanges roofs or in company car parks.

A major appeal of satellites more commercial organisation. Though its monopoly remains

these changes?

First, in most industrialised countries basic telephone service is now available to the vast majority of the population. The industry's focus is starting to shift away from extending the public network to expanding the range of facilities which are available on it.

Second, telecommunications technology is undergoing a pro-found transformation, which is facilitating the introduction of many new, versatile and inexpensive services. At the heart of this minor revolution lies the confluence of telecom-munications and computers around digital technology.

Lechnology

Until now, telephone systems have used analogue technology. The sound waves created by speech are transmitted as varying frequencies which correspond to changes in the pitch of the speaker's voice. When computers are linked to a telephone line, the binary code which they use must be translated into analogue form by means of a converter known as a modem.

The new generation of digital communications systems is designed to transmit all infor-mation as a series of zeroes ones, outwardly indistinguishable from computer lan-guage. Speech is "sampled" at rapid intervals, and the change in voice frequency is coded in digital form and transmitted down the line to the receiving end, where the same process is carried out in reverse to reconstruct the speaker's voice. No conversion is needed to

The exchange equipment which handles digital communications is very different from analogue switching and transmission equipment. The latest exchanges are in reality specially-designed computers in which electro-mechanical electronic circuits.

communicate computer data.

like automatic call-back, conference calls and caller identicated electronics, many of the same facilities can also be built into subscriber terminals.

It is not only exchanges What are the reasons for which are changing Transmission systems are also being transformed by the introduction of satellite communications and optical fibres, hair-thin flexible strands made of the purest glass which carry signals in the form of pulses of light. Both are competing to replace copper cable as the standard method of transmitting telecommunica-

> optical fibres have considerable advantages over copper. They digital information over long distance at very high speeds. with a far smaller loss of signal strength. Satellite com-munications are bounced off spacecraft orbiting some 20,000 miles above the earth; in optical fibre systems, the signal needs to be boosted by repeaters spaced every 5-10 miles apart, compared with spacing of no more than a mile required by most copper

The large transmission capacity offered by both of the newer technologies can be used in a variety of ways. For example, large volumes of computer data can be sent from one point to another at very high speed, a facility which makes them an ideal medium for transmitting live videocomerences.

Alternatively, many different telephone circuits can be carried on the same channel simultaneously. One strand of optical fibre can carry some 2,000 tele-phone calls, against a maximum of 32 on a pair of copper wires.

One of the leading practitioners of satellite communica-Satellite Business Systems (SBS), an American company owned by IBM, Comsat and the Aetna insurance

SBS provides an advanced private communications service for large companies with operations scattered across the U.S. Customers, who are charged a minimum of \$100,000 a year, devices are replaced by micro-transmit and receive via earth stations mounted on their office

is that they allow digital connections to be set up almost immediately between any locaintact, the Bundespost is seeking fication. By means of sophistitions. All that needs to be done is to install suitable earth

> One of SBS' major customers is Boeing, which uses the service to enable its engineers to tap from anywhere in the U.S. its vast computerised data bases. So great is the transmission capacity available that the entire contents of Encyclopaedia Britannica could be beamed from one side of the U.S. to the other in a matter of

But satellite communications quite expensive—SBS has attracted only about two dozen customers since it began operating in early 1981 and has yet to show a profit.

Satellite costs are also disproportionately high over short distances. The economics of using satellites for communications within European countries are far less attractive than in a country with the land mass of the U.S.. In the longer-run, many industry experts believe. they will face tough competition from optical fibre systems.

now starting to instal optical fibre systems in place of copper on trunk routes. The higgest network in the world at present is planned by the Canadian province of Saskatchewan: it will be some 2,000 miles long.

British Telecom has announced plans to build some 300 miles of optical fibre routes within the next few years. And the Mercury consortium, headed by Cable and Wireless. pro-poses to build a 700-mile optical fibre loop connecting English cities.

Several trials are being conducted into the use of optical fibres in local communications networks. British Telecom is wiring up a number of private houses in Milton Keynes. France plans to link 5,000 households in Biarritz. And the Bundespost is considering a much grander plan to rewire West Germany's entire telephone system with optical fibres at a cost of about DM 60bn over the next 30 years.

of laying new cable, the main optical fibre systems. But it disadvantage of optical fibres is seems probable that the two cost. At present, it costs about types

Many Western countries are should fall sharply as volume production begins. But optical fibres have many advantages: in spite of their large transmis sion capacity they are much more compact than copper, require fewer repeaters and are immune to electrical inter-

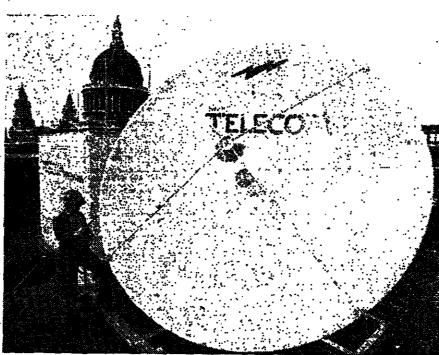
> A number of countries are developing both optical fibre and satellite communications. British Telecom plans to launch a satellite business service in conjunction with other European authorities in 1984.

The Financial Times recently carried out a trial of the ing instructions for its international edition from London to Frankfurt. If satellites prove economically attractive, the FT land line which links London and Frankfurt at present.

Most European telecommunications administrations see satellites as only a stop-gap until they have updated their terrestrial networks with Apart from the physical effort digital exchange equipment and of transmission £2,000 per mile, though this coexist for some years.



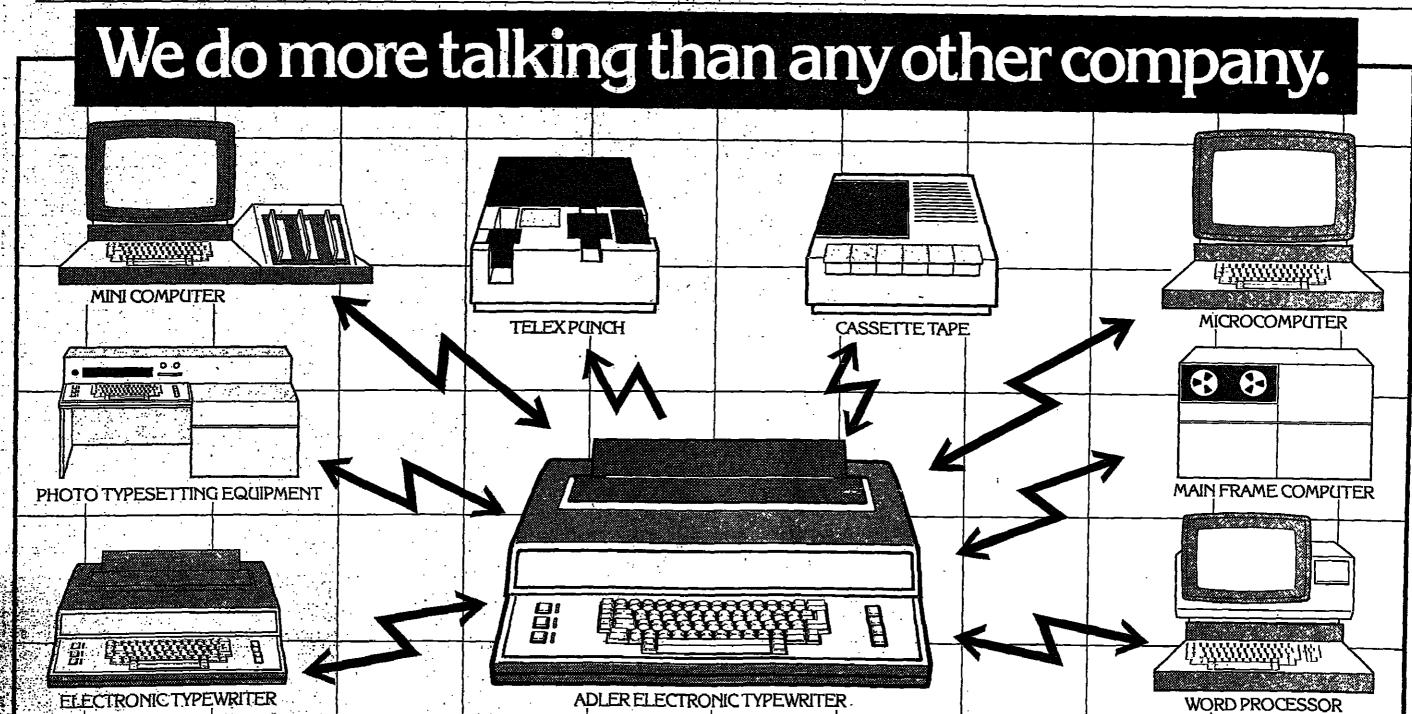
Miles of pure spun glass will soon circle the earth to make a web of communications as optical flore cables take over from the conventional metallic conductor cables which now make up the network. Telephone cables are the largest single expense in the UK telephone system and scientists have been exploring new and cheaper ways of sending messages. The answer, they feel, lies in ontical fibres. Above: technician Jan Harrison (left) holds the new optical fibre cable while, in contrast, millieright Fred Johnson holds the old-style cable





The Financial Times recently carried out a trial satellite relay of printing instructions for its international edition, from London to

Frankfurt. Right: A huge relay station at White Sands, New Mexic o. built by Harris Corp. for Western Union, uses half its capacity to communciate with the Space Shuttle and various satellites



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BULK STORAGE of the user's head systems can have fixed system has to

come a long way since it all ridges, or a combination of the started in the early 1960s. Paper tape, magnetic tape and punched cards were all that was available so that storage and retrieval of data was painfully

Today, big reel-to-reel tape machine are mainly used as longer term "dumps" and paper tape is hard to find. For immediate access bulk storage. most systems use one of a variety of disc stores (on which many millions of development money have been spent), drum cartridge devices, magnetic cards or bubble memories. Microfilm is in wide use for longer term storage and there are some sophisticated systems on the horizon employing the

Just as the pick-up arm on a gramophone turntable can be placed to play any music band, so the read/write head on a disc store can locate any one of magnetically recorded on the flat metal oxide surface. There can be several thousand data words (bytes) on each track.

At the top end of the disc spectrum is the fixed head type. which has an array of fixed read/write heads—one for each track - making it expensive and unlikely to be found in any but large office complexes. The average time to find a record is about one hundredth of a second. Extraordinary amount of data—a billion bytes or so -can be held on multi-platter dual spindle machines.

Less expensive is the moving head type. A single head is moved rapidly across the disc radius using a high speed solenoid. More data can be accommodated but access is about five times longer than

and word processor spurred efforts to design lower cost but fast and reasonably robust disc systems. answer, once again from IBM, came in the early 1970s and was the so-called "floopy" disc.

Many other companies have since manufactured it. of thin tough plastic and is held in an eight inch square envelope from which it is never removed: the disc rotates inside it and the head moves

The mechanics were hard to believe when the technology first appeared, but drive lives of five years are normal. The access time of floppies is about 0.5 second and about 250,000 bytes can be stored on one side.

Mini-floppies

Mini-fioppies (the discs are about five inches across instead of seven) have also appeared offering about half the capacity and are proving extremely suit-, wicto , configurations can Sive performances that would have needed a minicomputer a few

The most important recent development has been a disc technology that IBM called "Winchester" during development- a mere early code name which has stuck. Its secret is the minute space (about 20 millionths of an inch) between head and permanently fixed

The closer the spacing in disc working the more precisely can the tiny magnetic areas on the surface be recorded and sensed. However, the slightest speck of dust can be fatal and the

data in computer systems has discs, removable discs in cart- enclosed. Several of the com- standard and micro-cassette card which has very fine silver puter companies and many drives and cartridges from 3M particles in the surface layers, "independents" offer Win- and others. They are usually A fine laser beam burns black chester. Burroughs for example employed in lower cost systems has a 14 inch drive offering up as an alternative to disc, but (millionths of a metre) across to 80 megabytes.

Frequently there are two double-sided eight inch discs. One surface is used for head positioning and the other three for data. The result is lent to perhaps 50,000 names

There is also a "minni-winny" (miniature Winchester) using five inch discs with about six megabytes capacity. An example of a recent introduction, however, is a unit from Rotating Memory Systems that can have from one to four discs with up to 18 megabytes capacity.

IBM in particular offers magnetic cards, a column and row magnetic recording system used in their small business

Bubble memories made their debut in 1978 and heraided as the new bulk storage. They consist of a large number of rows of extremely small magnetised areas on a small sheet. Access is row-sequential rather than random but the worst access delay is about one second. With no moving parts or worries about contamination the idea seemed attractive for robust

bulk storage. But Rockwell, Texas Instruments and National Semiconductor have all pulled out leaving Intel and Motorola in the U.S. Basically the problem is that sales are not adequate while other costs mount. IBM has them but does not use them and Fujitsu and Hitachi are both ready.

computers and word processors the U.S.

access is rather slow at 10 seconds or so.

"Streamer" tape drives are becoming popular to back up fixed discs like the Winchester. where loss of data could be 10 megabytes capacity, equiva- serious. The established method of starting and stopping tape and addresses in a business for block recording is done system.

away with (obviating expensive tape capstans) and the tope runs continuously at 50 or 100 in/sec. Up to 61 megabytes can be held on a recently announced Thorn-EMI unit.

Laser systems

There are other systems that are only just coming out of the development stage. For example, a laser can be employed to make microscopic pits in a plastic surface, either in groove form on a gramophone-like disc,

Sony and Philips have laser systems for recording and playing back digital video and sound on a spiral-grooved disc. JVC also uses digital bits, but plays them back by detecting microscopic changes in electrical capacitance as an electrode runs over them.

Storage capacity is very high. The Sony 44 inch disc can hold five billion bits (about 120m words) and read them out at 4.3 megabits per second. Immediate objectives are in the audio/TV entertainment markets, but these discs can also hold computer data. They are of course, "read-only" systems — the data once recorded cannot be altered.

Falling into a similar cate-The other major magnetic gory is the Drexier Laser Card, system, tape, is applied in office about to go into production in This uses a plastic

be totally in the form of the Philips card about the size of a credit holes about five microns reading head from the otherwise highly reflective background. Recording rates are 10 megabits/sec and the card can hold up to a million words

of text. Bell and Howell However. and A. B. Dick have similar systems of recording, but with the merit that the impression

can be erosed and the resulting space re-recorded. For bulk storage where one of very many pages of text needs to be retrieved and displayed to a number of offices, development from Antone

Systems of Bournemouth uses

Its CRT display terminals (which might be employed for other purposes as well) show pages from a special microfilm store than can hold 4m frames, An indexing system, activated from the display and keyboard. causes the desired film frame to be scanned with a high definition line camera (2,000 lines) to give a picture within 10

The frame is held in the display unit's electronic store for read-out on to the screen with the same kind of camera and the film put back into the

For the longer term storage of office data, microfilm or microfiche (a sheet of about postcard size carrying many page frames) ought to be seriously considered for cost effectiveness, in spite of the upsurge

Geoffrey Charlish

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This new Olympia micro-computer is linked to a 132-character line dot matrix printer. The 64K RAM system, specially designed for small businesses, has the option of floppy disc and hard disc storage

Alan Cane discusses cost-effective methods

Better data retrieval a priority

General Robots, told a conference on data security back in 1979 that he could gain access to virtually any data bank. Nobody disagreed, but the heart of the matter was quickly identified by another conference participant who observed: "With time and money I could get in. Without time and with-out money, and if you changed your software every week, I

could not get in." The capacity to store vast amounts of information in electronic form is crucial to the paperless office. But what is even more important is the ability to retrieve any part of that information, at will, without taking substantial time or this facility, manufacturers have money, and in a form that is tried techniques based on hardimmediately useful to the

Technology is rapidly overcoming the problems of packing substantial amounts of data into small spaces. Succe access memory. industry standard memory chip, has meant that modern microcomputers have up to a megabyte of semiconductor store under their lidsroughly enough to store the full text of 15 average novels. The new miniature hard Winchester disks — "Mini-

store. And the large Winchesters offer many gigabytes (billions of bytes) of storage in a box about the size of a domestic refrigerator.

of these storage systems is to be made available in the office, suppliers must offer ways of accurately and cheaply.

GIVEN enough time and money, approaches. The first is obvious. Mr John McNulty, the irre-pressible managing director of memorandum stored has a name, and the user knows it is possible simply to key in that name to retrieve the document from its electronic pigeon

The task

Information retrieval systems become interesting when the user either does not know the name of the document he or she wants to see, or has the name wrong, or simply wents to browse through a batch of documents covering a general

In their search for the most cost effective method to provide this facility, manufacturers have the physical components of the system and software— the lists of computer instrucwhich make the system

ICL developed a hardware based system called CAFS—Content Addressable File Store -which used clever indexing methods to speed the travel of a disc drive read/write head to the correct track on the disc. That technology found its first use in a system to give telephone operators fast access to subscribers' telephone numbers.

Now Intel, the distinguished U.S. semiconductor company, has produced a microprocessor system which effectively manages the information stored in

This "database processor" is unusual because the computer software which actually manages the data is written into

Ofisfile can locate any document or group of related documents " with nothing more than an instruction phrased in plain language and containing a nat date, or other words in sought-after text."

pieces of software which will manage a database, but these

are usually provided in the form

of magnetic tape or a floppy

magnetic disc, and the instruc

puter's main memory.

computer.

Such

tions take up space in the com

Intel's hardware databasi

processor sits between the com-

It receives requests from the computer goes about finding the

passes the answer back to the

are not new; but the Intel de-vice brings database manage-

ment down to the level of the

to the level of the office system. A similar but larger system

developed by Britton-Lee 18 suitable for larger systems.

Some systems mix bardward

example, as part of its strategy for the electronic office launched

device it cails Ofisfile. It is

basically an intelligent filing

characters, the equivalent of

80,000 A4 pages of text, on disc. The device has only one con-

According to Burrough

cabinet. It can store

trol-the on/off switch.

Other companies make similar claims. Datapoint, one of the brighter companies specialising in distributed processing, have a system called AIM which the company claims, can retrieve individual words from a stored text. This is a software tech-The companies selling

CONTINUED ON NEXT PAGE

Secret of the best system

SOFTWARE is the invisible heart of the electronic office. It is the secret of the best office system — and it can usually be blamed for the

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Lo Distinguistal

faults of the worst. As a product, software is perhaps even more visually uninteresting that computers themselves. It is supplied as a reel of magnetic tape, a few thin plastic "floppy" disks, perhaps a handful of plastic-cased semiconductor memory chips.

Together with a stack of Some 15 months ago, Intellireference manuals and other documentation, these devices hold the essential instructions which make it possible for the computer to carry out any useful work at all.

From the user's point of view, the technicalities need not be important: what is vital to understand is that software is difficult to write and, as a consequence, expensive. Considerable skills are needed to write software that is

efficient and correct.
As Mr Dennis Jarrett put it in his book The Electronic Office (Gower/Philips Business Systems): "All computers need software and electronic office systems are no exception: in fact, they need rather complicated soft-ware. But good software people are scarce and there are not enough being trained."

He goes on to point out: "It's not a question of entry level, first job programmers. The need is for software maestros with skill and experience. They are expensive."

There are some solutions to the problem. One is the develop- Programming is still a job for ment of packages, generalised the professional; the pieces of software which can run on a particular machine or particular series of machines and which carry out a specific application. The

considerable cost of develop. The microcomputer itself is ment is then split between a partly to blame.

number of users.
Some of these packages designed for office and business use can be remarkably successful. An example is Visicale, a financial modelling

package.
It runs on the Apple II microcomputer (and now many
others) and, indeed, is thought to be one of the principal reasons for the success of that machine.

gence (UK), a British software house, wrote Micro-modeller, which also runs on the Apple and which is claimed to enable the technologically illiterate to carry out their own sophisticated computer modelling. It has also sold well — now there is a whole string of Visicalc look

alikes on the market. Then there is the software factory, the notion that just as robots can build other robots, so computers can be programmed to write programmes for other computers. At its simplest, this means the elegant programming tools now available to help pro-grammer productivity.

true "programming machine" remains to be built, however. There are a number of packages on the market which claim to make it easy for the businessman to write his own programmes using simple English and some of these general computer code from instructions quite effectively. But beware the slogan: "No previous sugan: "No previous experience required."

enthusiastic amateur will have to be prepared to mortgage his or her time, social life and possibly marriage to write useable programmes.

In the days when computing

power was only available in the form of the large mainframe, software specialists developed ways of producing systems software effectively and made it possible to run applications software sensibly (systems software are. the instructions which run the computer; application soft-ware carries out specific tasks for the user).

The advent of the microcom-puter turned this on its head. Limited in power, it was difficult to write effective systems software to run them with a corresponding decline in the effectiveness of the applications software.

The impetus

Mr Edsger Djkstra, the Dutch software maestro, publicly proclaimed the coming of the micro as a disaster for pro-

gramming.
All of which may explain why. despite the fact that micro-processor based systems are the impetus behind the new office automation, office watchers are seeing an in-creased role for the traditional mainframe in the office of the future.

Mr Michael Naughton of Langton Information Systems, chairman of the Computing Services Association software group, points out that the mainframe still has the edge in cost effectiveness in the office.

Mainframes are designed for pure throughput - number crunching - and many of the facilities expected in advanced office systems — the hand-ling of text and graphics for example, require considerable processing power. They also require massive

reserves of memory, and if the cost of memory is falling rapidly in the micro and mini computer areas, it is falling stupendously on mainframes.

Mr Naughton points out: "By the time you have established a local area network, set up your contention procedures and organised effective data retrieval, you've done an amateur job in constructing a mainframe yourself."

Furthermore, many companies both in Europe and the U.S. are establishing videotex systems (systems which use a television set to display information transmitted down telephone lines) to disseminate information among their executives.

As the number of terminals served by any system in-creases, the power of a mainframe is increasingly required to drive the system.

Mr Naughton believes that local area networking — the concept of linking small office

machines together cheaply so that data can be passed rapidly and accurately between them will be dominated by main-This would argue in favour of

an IBM approach where the mainframe is still the bub of the system and against the Xerox Ethernet concept where there is no overall system controller. There is no reason, of course,

why a mainframe computer

should not be attached to an Ethernet system. With the continued growth of videotex, the idea of the software "gateway," the means for a videotex user to get access to a third party database, is taking on fresh im-

The "gateway" works like this: A Prestel user in the UK can gain access to the pages of information held on British Telecom's Prestel computers

portance,

but to no other databank, With a software gateway it is bossible for the user to interrogate any other database which is connected to the system

The best-known example comes from West Germany and involves a small bank Verbraucher Bank and the German videotex system, Bildschirmtext.

Customers of the Verbraucher Bank are able to bank at home using Bildschirmtext and a gateway which enables them to get access to Verbraucher Bank's main computer files. There are clear problems of security and quality not to mention response time in gateways systems. How should an organisation like a bank allow customers access to its files? The Verbraucher Bank system is well protected by layers of passwords and access protocols, but that will not satisfy all organisa-

Langton Information Systems has written a piece of software called preview which transfers information from the files of a mainframe computer to a viewdata system and formats it ready for view-

ing. The idea of a methodology for ning to take hold now in just the same way that a methodology for data processing made sense of chaos in the early days of computing. ccording to Mr Nigel Harrison of System Concepts, According a new consultancy set up to specialise in office systems methodology: "The use of technology should only be considered when all other components of the office system have been identified." other words, even the smartest software will not bring about a more effective

office if it is applied to the

wrong problems.

A system should improve with age.

The extraordinary success of the MDS Series 21 product line is based on one very simple factor: If you can justify installing one of our systems to automate even a single distributed processing function like data entry, you'll be delighted with what the future holds

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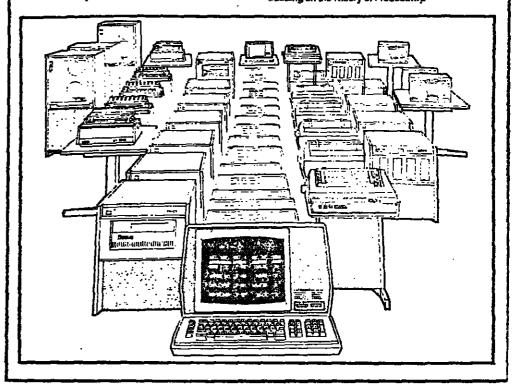
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Satellite being launched by Philips business equipment division, is a low-cost text entry system for the P5000 range of word processors. It has the full range of word processor editing functions and an interface which allows communication to the main word processor as pictured above. As at least 75-80% of an operator's time is spent inputting text, the machines are frequently not used to their full capacity. Satellite allows multiple access to a P5000 word processing installation and thus greatly increases the machine's productivity

Improving data retrieval

CONTINUED FROM PREVIOUS PAGE

sophisticated retrieval systems are secretive about the details of how it is done. Datapoint describes its indexing method as a hologram of the material in the document. Burroughs says Offsfile is based on two techniques; a way of eliminating redundancy from the stored text and a retrieval system based on the syntactical rules of English.

It is necessary to make a clear distinction between systems such as CAFS, AIM and Ofishle, which are simply ways of getting quickly to where particular pieces of data are stored in a databank, and database manage-ment systems such as the Intel ment systems such as the three database processor and a whole host of proprietary database management products which make it possible to rearrange existing stored data for a whole variety of new purposes.

Mr James Martin, one of the most lucid of computer educa-tionalists says a database management system is: "Like a conjurer pulling different coloured handkerchiefs out of a hat. It derives its users' make believe records from its store of data. It finds out what physical records contain the data in a given request, has a means of locating those records, and from them, derives the logical records that were asked for."

The U.S. software house and the location of locating the location of the location

Applied Data Research markets a range of software products based around Martin's ideas organisation to build a rela-tional dautabase; a database where many users can have to

many different views of the same set of data.

ADR markets Data Designer a software package developed by James Martin which is used in conjunction with a data dictionary to create a relational database. Data Designer is a modelling tool; data dictionary —of which there are a number of proprietary examples—is a piece of software which lists all the data items that are used, their definitions, how and where they are used and who is responsible for them. MSP offers Design Manager a package with much the same

The growth of the market in databàse management products remarkable-probably more than 25 per cent a year. Logica, a UK based software and sys. tems house with a good reputation in communications, developed a relational database package called Rapport. Now the market for a good software package in the computing field is a little like the market for a new pill in pharmacenticals—it can make a company's reputation and fortune. Rapport is proving just such a package for Logica. In its first 18 months it turned over more than \$1m

and continues to sell well, Rapport is used at more than 70 sites by organisations such as BP, ICI, Unilever and British Gas. The latter is using the package to control and plan able which will be incompar-financial dealing on the sterling ably better than today's exand dollar markets. British Gas ample. The pressure on manumoney market dealers are able facturers from sophisticated

simple interactive query language. They are able to call up information on banks, brokers, portfolios, exchange rates, nego-tiable instruments and transactions.

"Scrapbook," designed and developed by the National Physical Laboratory but turned into a product and marketed by the software house Triad Computing Systems is not a fashionable relational database system—it was put together back in 1973—but it does pro-vide its users with facilities for accessing, updating and linking textual records.

Its users include the National Water Council, which uses it to generate and edit text for many of its publications.

Scrapbook is in some ways the archetypal software re-trieval system for the electronic office. It stores and retrieves information, processes text and makes possible elec-tronic mail. And it has been around for a long time and runs on well proven equipment— usually the DEC PDP-11 range or CIL 8000 series.

Triad describes Scrapbook as a company viewdata system with better input and retrieval, bet-ter security, and better print-

The perfect database management and information retrieval system for the office has yet to be written, but within a few years systems should be availmake enquiries using a users will see to that.

Give it a sniff of a file and it'll track

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files related to the word or phrase used, in case they're relevant. In all, it'll carry at least 80,000 files

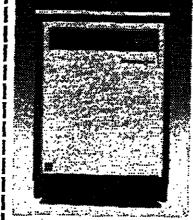
or, to put it another way, 50 filing cabinets.

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remarkable new office system from Burroughs called OFIS1-one of the most advanced information systems in the world.

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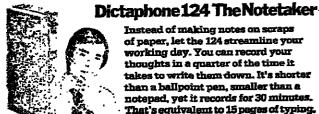
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That's equivalent to 15 pages of typing.

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Geoffrey Charlish on developments in screen technology Trend towards more colour and graphic display

lisplay as a man/machine data interface were the military and it was not until the mid-1960s that screens became associated with commercial computers.

The appearance of small business machines, word processors and a variety of other office and industrial devices has driven the peripherals industry forwards with such velocity that there are now at least 200 companies offering terminals based on the CRT—although they are not all manufacturers in a world market that probably exceeds \$6bp, according to market researchers Creative Studies International.

It is set to grow at 30 per cent per annum and will be well over \$10bn by 1985, by which time there will have been a noticeable swing towards colour and graphics in business/office displays.

However, although developments in processors, storage and software techniques will pro-ceed apace, driven largely by very large scale integration (VISI), display technology will continue to be based for the most part on the CRT.

The reason is not hard to find: the CRT, with its weightless electron beam writing pen flexible way of producing an illuminated display. It produces the brightest characters on screen, can produce any colour and undergoes con-tinuous development to produce finer detail.

It is not entirely ideal though. The ideal office display would be a lightweight flat panel, unaffected by ambient lighting, which could carry up to 6,000 characters or equivalent graphics-in colour, be instantly altered on screen and consume little or no power. Apart from bulk, power

consumption and the need for high voltages, the CRT still has the most to offer. Recently, the flat CRT has re-entered the limelight and commercial versions of Clive Sinckair's developments, with a side-mounted electron gun and a beam turned through 90 degrees before striking the phosphor screen, are awaited with some interest.
Other contenders exist how-

ver, including plasma and electro - luminescent panels, liquid crystals and the light emitting diode. They all have

single- or two-line displays in in a solicitor's practice. office systems such as the lowelement light up as required. white characters. The material With the CRT it is simply a on the screen can be scrolled

THE FIRST users of the matter of applying voltages to —as in television programme cathode ray tube (CRT) a pair of deflection coils to put credits—or changed a page at the spot on the tube face a time at regular intervals.

exactly where it is needed, at very high speed.

Using the keyboard, a currently high speed.

prove viable. The light beam, like the electron beam, has no inertia and can also be moved about rapidly as required.

inertia and can also be moved about rapidly as required.

In the CRT displays can be produced either by scanning the tube face—as in a television picture raster—switching the screen into two, and just recently four areas, to allow

Using the keyboard, a cursor

usually a line under the Laser systems may eventually character—can be moved to any letter or numeral that has to be changed; some areas of the screen can be "protected" to



The Xerox 860 designed largely for secretarial and administrative use and available with either a full or partial page display screen. Previously available as a stand-alone information processor, the use of an Ethernet Interface Board makes it immediately compatible with the network

freely addressed mode, producing superior dot-free graphics. The ultimate office display might well be able to do both. possibly on different parts of the screen.

Dot matrix scanning generally used to build alphanumeric characters. The letters and numbers are held in an electronic refresh memory in computer digital code (ASCII) and on demand are converted by a digital-to-video converter into instructions for the electron

For a line of seven-tall by five-wide dot characters, seven flight simulation. Doubtless horizontal sweeps are made, only some of these will find their the required dots being energised. Most screens have 24 lines of 80 characters each.

For the screen user all mandrawbacks of one kind or ner of manipulation on the when it tube face is possible to ease possible to construct whole engicomes to addressable graphics the task at hand, from order neering fabrications such as at which the CRT excels. intake entry in a factory bridges and buildings on the made that make viewdata more But they are being used in sales office to word processing screen and then observe them attractive for in-house business

end word processor. In general they need matrices of address were to make each discrete can be inverted to black on the zoomed in for greater can be inverted to black on the zoomed in for greater can be inverted to black on the zoomed in for greater can be inverted to black on the zoomed in for greater can be inverted to black on the zoomed in for greater can be inverted to black on the zoomed in for greater can be inverted to black on the zoomed in for greater can be inverted to black on the zoomed in for greater can be called a solution assetting to the can be called a solution assetting to the can be called a solution assetting the can be called a solution assetting to the called a solution assetting the called a solution assetting to the Certain areas on the screen

beam intensity as necessary to comparison of several fields of build the image or the beam similarly formatted data. Such can be used like a pen in the manipulations are feasible in colour, although the cost goes

All of these techniques, par-ticularly graphics manipulation. need memory in quantities which would have been unthinkable 10 years ago. But volume production and very large-scale integration (VLSI) continue to bring memory prices down, so that display systems will get cheaper in real terms. Some extraordinary display

achievements are taking place in science and engineering graphics systems such as com-puter-aided design (CAD) and way into business colour terminals, with dynamic graphics that by 1990 will make today's offerings look like child's play. In CAD, for example, it is

from any angle—the construction can even be "entered" Canadian Telidon system is now tion can even be "entered" detail

For engineering design offices network is set up.

machining and other production schedules are sutomatically produced.

One company, Applican, is offering Solids Modelling in which the customary wire frame line-only constructions can be transformed into full colour, three-dimensional models, with shadow areas. Products can be seen more or less as they will appear after manufacture.

An advanced approach is graphics is bit-mapping in which the colour and brightness of each picture point (pixel) if held in a memory location in a semiconductor store, where it can be altered to suit some grander plan. At Queen Mary College, for example, a team is working on display arrays which allows pages of informa-tion to be handled on screen rather like pages of actual gaper on a desk top, but with colour changes, free updating, move-ment, and so on.

A recent announcement from Computer Pictures Corporation in the U.S. is of Trend Spotter. which combines full color graphics with comprehensive analytical facilities "so answer ing the decision-maker's need to be able to quickly assess facu in readily absorbable form. The system does not just display data in a sophisticated way-

numerical operations are per-formed so as to optimise it. Users can create the charts or graphs they want manually, or the machine will directly interface with the company corporate database on any make of mainframe through a special interface. The machine takes files from the mainframe and converts them to picture format. After use they can go back to the big computer in their original form or in picture

 $V_{(ji)}$

Having got text and graphics, there are systems available for sending them elsewhere over a phone line. Basically, these snatch a frame from the display's video circuits, digitise it pixel by pixel and store it. Then it can be transmitted at any speed to suit the transmision medium. The Finnish company Salora has just anounced a system for general

application.
Viewdata, of course, allows alphanumerics and graphics to be sent over lines, but there is a speed limitation due to the low bandwidth of the telephone connection. The result is lumpy graphics and rather large alphanumerics.

Rut improvements are use when the UK's digital phone

New printing systems are versatile and noiseless

Advent of the laser beam printer

proponents seems to be to do away with paper altogether, they are probably whistling in

Not only will most of the executives within a company want "list copy of important computer-derived text and figures, they will also want for their briefcases the graphics that the modern office system : can produce,

Letters, even if they are sent by "electronic mail," will presumably have a paper existence at the other end. The fact is that the VDU, for all its advan-

rages, cannot be carried about in car, cab, plane or train.

So for the foreseeable future, perhaps indefinitely, marks will be made on paper. The object will be to make them clearly, in colour if possible, quietly, at high speed and at minimum cost. As with any equipment, some of the attributes have to be traded off against others. he traded off against others.
The fast but noisy line printers of the computer room are not suitable for the office and while the newer laser, and noiseless and very versatile indeed, their high through-put

and cost rule them out in all

but the very large-scale office

Daisywheel

complexes.

For office use, two types, the dot matrix and the so called desisywheel " machines are the most favoured. With matrix printèrs, each character is composed from a 7 x 5, 9 x 7 or are left that form charecters, even a 24 x 12 dot matrix. elbeit still with the "computer-The dots are made by the ends of thin rods, each actuated by a tiny solenoid in appropriate combinations to give alphabetic or numeric characters as the head moves across the paper. Obviously, the more does there ally charged character-shaped are the better formed the areas are impressed on the

characters can be. Nowadays such machines are under microprocessor control. The head moves in

blank passages in the text to for the office, ink jet and laser, greater importance for business-increase printing speeds up to are at the moment expensive men since so much more can be several hundred characters per for small users.

But for letters and reports the characters can look rather "computerised" because of the dot structure and the machines, although fairly fast, can be The advent of small business

computers and word processors spurred the search for a low cost, quiet, compact machine that would give typewriter quality.

The result was the daisywheel type in which a solid fount (character set) is carried at the ends of radial webs round the full 360 degrees of the "daisy." The low mass plastics wheel can be rotated at high speed to align each successive character with the print hammer. Founts are quickly changed by chang-ing daisies. Output is indistinguishable from conventional typing and sometimes is

Many such machines bear the Qume or Diablo labels, although the Japanese have entered the market. Speeds are up to 60 characters/sec and prices in the £1,000 to £2,000 brackets. To get away from the noise

of impact altogether, other methods of marking paper have been developed. For example, if the paper is coated with a very thin aluminium layer, a group of electrostatically charged pins can be selectively discharged to the metal at high speed as the paper moves past. Tiny burn marks ised" look.

Xerography can also be employed. On the market are machines with paper-wide heads yielding speeds up to 18,000 lines/min. Electrostaticpaper to which "toner" particles adhere and are heat-

fused to the surface. Two quiet and versatile tech-

In ink jet printing, tiny drops

of ink are electrostatically deflected to form characters on the paper as it passes. Canon in Japan has just announced that it is working on a system which thermally expels droplets of ink at precise moments from a linear array of 2,000 nozzles over the page width, allowing any kind of pattern to be made. It may cut the cost of the technique.

Versatile

Bristol

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The laser beam, being inertia-less, can write very quickly with similar versatility. Hewlett Packard has just announced a machine for £100,000; although this is somewhat below the going rate, it is also not really on for the typical office. Graphics are assuming

cathode ray tube, display the three colour signal components in rapid succession to 2 Polaroid film camera via appropriate colour filters.

The result is an instantaneous picture of what is on the screen. of much greater clarity than that obtained by trying to photograph the screen direct.



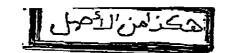
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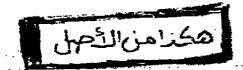
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numerics So hardware providers are offering ways of capturing the colour graphics data from the screens of VDUs. Several companies are offering printers that will capture a "screen-full" of information, store it and print It is also possible to take the VDU's video signals and using a high definition monochrome



Keeping in touch by video-conferences

puterised data base.

pad or keyboard.

● A simple and inexpensive ter-

• The terminals can be linked

to the central computer by ordinary switched telephone cir-

can be adapted to perform a

wide variety of communications and transaction functions. For

sages electronically between

different users or effect pay-ments between bank accounts (assuming of course, that the

cuits or by leased line.

THE OLD adage that a picture is worth a thousand words is worth a thousand words is likely to prove as true in tomorrow's electronic office as it may not be as popular designed to carry voice communications whose maximum of use and relatively low cost.

THE OLD adage that a picture hundreds of thousands of dollars routes, copper telephone circuits or viewdata as it is known in Britain — has excited considerable interest because of its ease with executives who have come munications whose maximum of use and relatively low cost.

The old adage that a picture hundreds of thousands of dollars routes, copper telephone circuits or viewdata as it is known in Britain — has excited considerable interest because of its ease of use and relatively low cost.

Thousand words is bank has put its accounts into a particularly for education. Using moving pictures, alphanume of use and relatively low cost.

The old adage that a picture hundreds of thousands of dollars routes, copper telephone circuits or viewdata as it is known in Britain — has excited considerable computer).

Using moving pictures, alphanume of use and relatively low cost.

The old adage that a picture hundreds of thousands of dollars routes, copper telephone circuits or viewdata as it is known in Britain — has excited considerable computer).

Using moving pictures, alphanume of use and relatively low cost. of communicating information, most enjoyable business perks. And its validity will be all the

executives in different locations, face-to-face by means of tele- handful of major cities. vision apparatus and audio equipment linked in a closed.

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Video-conferences can be arranged between two in-dividuals, equipped with desktop terminals consisting of a small camera, a screen and a microphone-loudspeaker. Or they can link groups of people seated in two or more specially designed conference rooms. As well as seeing each other, par-ticipants can also exhibit text and graphics on television moni-

Though video-conferences cost many times as much as a normal telephone call, they offer considerable economic and practical advantages. Two executives on different sides of the world can talk directly almost at the press of a button, instead of having to spend hours in flight travelling to a meeting.

A number of larger companies particularly in the U.S., have started using video-conferences on a regular basis. One of them, the Atlantic Richfield oil group,

has been for traditional methods to look on travel as one of their

The first commercial videogreater if the picture is a conference service was intro-moving one, which represents its duced by American Telephone subject in a life-like fashion.

One of the recent techniques
which most excites designers of integrated office systems is proved a deterrent, and it was video-conferencing. This enables suspended. AT and T has since launched another service, though separated by a few streets or by it is only available between thousands of miles, to converse special conference rooms in a

Costs cut

Video-conferences have been extremely expensive in the past because the capacity needed to carry them could only be obtained by using a large num-ber of ordinary telephone channels. But the problem has been greatly simplified by the advent of newer technology in the form of direct satellite communica-tions and optical fibres, which carry signals in the form of light

The crucial element is something called "bandwidth," the technical term for the range of frequencies which can be transmitted on a system, which is measured in units called herz Television pictures in colour require a bandwidth of about 6m herz, and the new generation of "high definition" television which will transmit pictures in much greater detail, will require twice as much.

Satellite and optical fibre transmission offers an abundance of bandwidth. But with says that it is now saving the exception of major trunk

frequency seldom exceeds 4,000 herz. In practice, it is difficult a large consumer market for to expand their bandwidth to the dimensions required by colour television.

Some techniques have, however, been developed recently to notably in financial institutions mitigate the bandwidth problem. and in the travel industry.

One system is known as " slowscan." Instead of being refer videotex's appeal. These are: freshed as much as 25 times per

It enables untrained necessary second, as is the case with nor-nel to "talk" to a computer. By mal colour broadcast transmis-following step-by-step instrucsions, a black-and-white picture is transmitted about once every five seconds, slowly enough to be squeezed down a telephone

Another newer method consists, literally, of sending only parts of the picture. Instead of transmitting the complete image each time, the system "samples" it regularly and then sends only those elements which change between samplings. This tech-nique sharply reduces the required bandwidth by as much as three quarters.

For the foreseeable future.

however, live communication of moving pictures is likely to remain a premium service. A considerably larger market is likely to develop in the near-term for video systems which sages electronically between transmit static images of text and graphics.
In Western Europe videotex—

THE ELECTRONIC OFFICE VII

Though initial hopes of finding 'At present, the largest single videotex have been largely disvideotex service in operation appointed, it is starting to remains British Telecom's Presacquire a following among certel, though its 12,500 subscriber terminals are far fewer than the relevant part of the protain types of business users, had initially been hoped for, But more than 3,000 terminals are his responses, so that the in-also linked in Britain to private structor can analyse the There are four main reasons systems operated for the benegt of a specific group of users. One of the largest of these is Topic, the London Stock following step-by-step instruc-Exchange's share price informations on a display screen, an tion service for brokers.

operator can retrieve "pages" of information on a wide variety of subjects stored in a com-Much has been made British Telecom of Prestel's capacity to handle sophisticated colour graphics, including moving cartoons. A technique minal can be used. All that is needed is a television set equipped with a handful of special microchips and a keyenable Prestel to display photo-graphs. But the picture is slow to build up on the screen and requires a considerable amount of data storage capacity to be built into the terminal. At present, this is a costly addition. Recently, products have

• With suitable software (pro-begun to appear which combine gramming), videotex systems videotex with other electronic systems in a single unit. Both Rediffusion and Scicon, the computer systems house, have launched systems which embrace videotex, videocassette recorders, personal computers and The Scicon system is designed

system can automatically replay gramme. The computer records student's performance.

They permit swift programme selection and can be designed to halt until the user provides flashed up on a television

General Motors is using videodiscs to inform its American dealers about new model launches. Instead of summoning them from all over the country it dispatches discs to showrooms all over the country. The dealers can them watch films showing the new cars going through their paces.

The videodisc was developed originally as a mass entertainbeen largely apathetic. But the

numeric displays and sound track, it takes the student through a learning programme and then interrogates him. He punches in answers, using a keypad, and if he makes errors the

Many of these features are also available on videodisc systems which have started to appear on the market in the past couple of years. Pictures and sound are recorded on a revolving disc which is "read" by a laser or a special stylus. the correct response to questions

ment medium, though the initial to tiny "pits" embedded on the response among consumers has disc, which would be sconned



Video systems are being increasingly used in the area of internal company communications, as seen here at the City of London branch of Abbey Life Assurance

optical technology used in the viable, techniques must be more sophisticated videodisc systems could have widespread impact in another application-

the storage of computer data. Research is now being conducted into converting the elec-tronic zeroes and ones which comprise computer language in-

developed to permit the discs to be reprogrammed easily by the user and to manufacture them to a very high standard of accuracy. But if these hurdles can be overcome, videodiscs could prove the basis for storiag vast quantities of information at very low cost.

Guy de Jonquieres

Growing market for PABX

going a rapid metamorphosis. Harris.
While a number of companies Telecommunications manustill have manual switchboards facturers in the U.S. and UK still have manual switchboards facturers in the U.S. and U.K. with plugs and sockets telecommunications. manufacturers broadly similar line that the modern PABX (private automodern PABX (private automodern PABX (private automodern PABX) is the most natural and cheapest way of basing the matic branch exchange) is set electronic office. In addition to to become the very hab of the landling voice traffic new PABX's are being configured to carry data traffic of different

nechanical automatic exchange. in both Europe and the U.S. for computer controlled exchanges with a growing number of systems and features.

In the U.S. there are more than 30 different companies offering PABX systems including Rolen, Northern Telecom, GTE, Stromberg-Carlson, FIT, Nippon Electric Company (NEC), Mitel Siemens, LM Ericsson and American Telephone and Telegraph itself.

In Britain the choice is more limited. At present British Telecom has a monopoly on the supply of all exchanges with under 100 lines, which represents 90 per cent of the market measured by units and approximately 50 per cent by value.

Until last year British Telecom only supplied exchanges with ancient electro-mechanical technology. It now offers three conventional wiring compared advanced computer controlled with the expense of installing exchanges which are being co-axial cable needed for such rapidly installed. The first, the systems as Ethernet, Wangnet Monarch, was designed at its own research laboratories at Martlesham Heath near Ipswich and is made by Pleasey and is needed without a heavy GEC. It is an advanced digital investment in extra wiring, exchange with between 24 and Telephones can be replaced by 120 extensions and up to 30 voice and data terminals at the exchange lines.

With over 2,000 Monarch ex-changes installed in the 15 and data terminal which can menths since its launch British be used for electronic mail, Telecom has recently placed an speed dialling, electronic diary order for more worth £40m, and directory. split equally between GEC and spir equally between GEC and Plessey. It brings the total value of orders to £120m for Monarch which will be compatable with System X, the digital public exchanges gradually being installed in the network.

£100m orders

British Telecom has a smaller exchange, the Herald, developed by TMC, a subsidiary of Philips works remain analogue there which is manufactured by into digitally switched equipostables, part of ITT. TMC will international standard.

Soon have delivered its 10,000th Herald to British Telecom

Canadian telecommunications company which is building a sizeable factory in Wales. An initial order for £5m of exchanges last year greatly the fully automated office will upset the traditional suppliers fundamentally after the nature (GEC, Plessey, STC and TMC). of PABX products and thus the That order rose to £10m and Mitel has just received a second

order for £15m. Large PABXs of more than
100 lines are offered in the UK
by Plessey (based on a Rolm exchange), GEC (based on a Northern Telecom exchange);
IBM, ITT-STC, Thorn Ericsson a new set of competitors will and Philips In representations. and Philips. In preparation for the liberalisation of the UK market for PABXs British Telecom is evaluating for the Department of Industry exchanges from Plessey Office computer industries."

Industry exchanges from Plessey Office computer industries."

THE ONCE humble private Systems, ITT Business Systems, telephone exchange is under-Mitel, Ferranti - GTE and

carry data traffic of different

The modern PABX has more types.

The modern PABX has more types.

Plessey last year announced than its own ancestors, like the its office automation strategy based around a modified PDX mechanical automatic exchange. (its digital PABX) which is There is a fast growing market similar in approach to Rolm and Northern Telecom in North America. Plessey has developed a voice and data workstation which can be used for a host of functions including word processing, electronic mailbox and interconnection with local area networks via the telephone wires and the PABX. ITT Business Systems has re-

cently announced the linking of its PABX, the 4080, to a telex switch and a data switch through small "black boxes." It means for example, that a telex message can be received on a viewdata terminal connected to the switchboard or a radio pager can be sounded by a telex call from anywhere in the

Mitel, which is shortly to launch a powerful and large digital PABX, the SX-2000, points to the advantage of using and the Cambridge ring.

It says the system can become used increasingly for data as it is needed without a heavy investment in extra wiring. company's own pace. Mitel will

One aspect of the rapid introduction of new technology is the shortening lifespan of PABXs. A product which once had a lifespan of around 20 years is now set to fall below 10 years. Another is the growing battle between digital and analogue exchanges. Although digital will eventually become the standard there is a strong argument that while public net-works remain analogue there

Herald to British Telecom number of observers believe Orders for Herald to date are there will be a considerable change in the structure of the The third exchange is made PABX market with a number of by Mitel; a rapidly growing contenders disappearing.

A report last year from Creative Strategies International, San Jose, California, noted: "The requirements of the fully automated office will be demonstrated at the california of the fully automated office will be addressed to the california of the cali characteristics of the companies that can successfully compete in the new market.

emerge from among those companies currently identified most strongly with the data process-ing, office equipment and

Jason Crisp

Atypical British Telecom Monarch Call There are abbreviated codes for long or about 30 lines, and up to 120 extensions.

Connect system costs about £5,000 a year to lease excluding VAT.

Enough to make a chartered accountant certified?

Not if he works out the sum a middlesized business spends on a system that's out

Let's start at ground level. Many systems fill a roomful of expensive floor space with switching gear.

But ours slots its microprocessors into a cabinet the size of a vending machine.

Yet its flexible enough to handle up to

And if your accountant were to look through its facilities he'd soon begin to see the number of ways an old phone system can lose you business.

For example, if the extension a caller wants doesn't answer he'll hang up and call someone else.

With the Monarch, you can have calls diverted to another extension if you're going to be busy or out. In any case all unanswered calls are automatically returned to the switchboard after about 30 seconds.

Making calls is easier too.

regularly used numbers, the last number you rang can be redialled automatically, and if another internal extension you want is engaged you can get the phone to ring you back when they're free.

In short, you can tell your accountant that you'll be wasting less time over calls and be more efficient in handling them.

And more time means more business.

information, send off the coupon below.

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THE ELECTRONIC OFFICE VIII

User friendliness in the computer. Alan Cane explains

New methods of input

COMMUNCATING with a computer was, in the early days at least, not for an ordinary mortal. Even the specialists found it something

of a chore. The first successful electronic computer, Colossus 1, built by the British in 1943 to crack German military codes, had its operating pro-gramme hard-wired in place, meaning that if the operators wanted the machine to do something different, they had physically to rewire the beast. The data on which it oper-ated was fed to it on paper tape, which it could read at the quite astonishing rate of 5.000 characters a second. It is a far cry from Colossa to the kind of input taken for granted these days-key

of operators entering the It is quite difficult ever now to understand the kind of impact key-to-tape (which made the name of Mohawk Data Sciences, now MDS) and key-to-disk (which established the reputation of CMC).

poard, screen and a roomful

Both these companies realised the value of using a small, cheap minicomputer to validate and format data and store it to make it accessible to a big, expensive mainframe computer without taking up valuable processing time on the frame itself.

All of this has relevance to

the period, not over by any means, when most of the data processing carried out by a company was carried out in the computer centre. Again, mere mortals, stay clear! With the steady "leakage" of computing power from the computer centre out to the periphery, the search is on for hetter ways for ordinary bustto computers and get sensible answers.

Tom Stewart, a consultant with Butler Cox and Partners, who has been heavily involved with the ergonomics (the fit-ness for human use) of computing puts it very strongly: "My own personal view is that the one issue which will dominate the 1980s is user friendliness." friendline

"User friendliness," he goes on is much used and perhaps overused: "The example that springs to mind is the cash register or till that, instead of having a little light that stays on to tell you it is working, says 'Hello' in its display."

Differences

"That fools no-body," he "That tools no-lody," he says: "It is a eash register. It takes money. It is not really saying 'Hello.' All that the 'Hello' is saying is that the power is switched on. That is a gimmick and it is very irritating after a short period of time." of time."

So in looking at new methods of computer input-which is what communicating with a device in the electronic office is all about—it is important to distinguish between the gimmicky and useful, between the valuable and the merely inflexible. Hand-written input is beginning to make its mark. The

commercial systems available today chiefly evolved out of work carried out at the National Physical Laboratory. The Nacional Financiale Bank in Mexico City has installed a system built by Transaction Security. Their

customers have to sign their names on an "electronic

names on an "electronic notepad" before they are allowed to withdraw cash. The

recognise the signature and compare

Quest Automation has a similar system; its Micropad incorporated in a is now number of other manufacoffice systems turers' Rediffusion, for example, offers the Micropad in its equipment as the "Write-

away " facility. These systems, however are somewhat limited. Characters have to be drawn clearly, and they have to be written on specified areas on business forms. Fine for order entry or stock checking, but of little use for free hand

Hand-written entry, just like keyboard entry is still a slow method of getting data into a computer. A new and exciting idea is the use of digital optical character readers.

These are now able to read a wide variety of type-faces and can scan and enter a whole sheet of text in matter of seconds. Some of the newer machines can switch rapidly between optical reading mode and facsimile mode. If the machine comes up against a character that it does not recognise as an authorised letter or figure, it simply switches mode and captures the image of that character as a stream of

binary digits. These fast entry methods could save time and labour in the processing of large amounts of text, the input of for full text retrieval, for but they are example. dependent on sophisticated finding and methods of extracting the

Voice input is perhaps the most exciting prospect. It is also perhaps the most distant, although remarkable progress has been made in the past few years. There is a large difference between the technical problems of voice generation talking watches and type-writers or automatic landing systems for airline pilots and the technical problems of

voice recognition. Some of today's systems are able, with careful training, to recognise 200 or so words. But the general belief is that it will take much quicker microchips and much more advanced software techniques —the "Fifth Generation" com-puter is usually invoked here significant progress.

in any case, most computer specialists believe there is a long way to go with conventional input techniques before the most esoteric need be

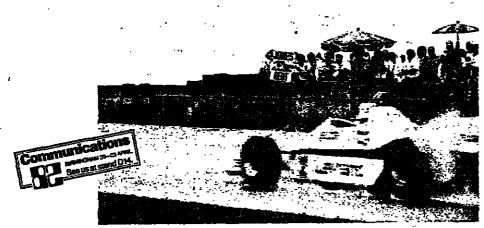
Voice response systems good examples of a simple but effective way of communicat ing with a computer. The terminal is a touch tone telephone. It generates pairs of audio tones which (as elec-trical frequencies) the computer can be programmed to recognise and translate into computer language binary

digits. If the data is entered correctly, a speech synthesis chip in the computer is triggered to pass simple mes-sages down the telephone line -"O.K." "Now give orden number." "Thank you am Goodbye." This is all useful information compared to the gimmicks of which

For more detailed information on the Philips EBX 8000 DV write to: Philips Telecommunications, P.O. Box 32, 1200 JD Hilversum, the Netherlands. Telex 43712.



Business Communications



To everyone with a fast-moving business and a slow-moving communication system.

> Loday we live in a data-based, communication-oriented age. Information handling is growing

faster than manufacturing.
Office employment absorbs about 40 per cent of the working population. Today more than ever, you need a fast-moving communication system to match your fast-moving business.

Which is why the unique new Ericsson MD 110 communication system can be so important to your organization's future.

Priceson MD 110 is a functionally modular, digital, total communications system designed to be cost-effective up to 10,000 extensions. It provides all the services and faci-

lities you expect of a modern, digital

communication system. And a lot more besides For example, it can function 252 PABX with remote 5witching units for main satellite

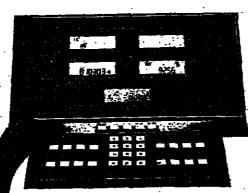
It can replace

conventional

transit

exchanges

in private



Dut most important of all, Ericsson MD 110 not only offers the conventional PABX functions of internal and external voice communication; it also provides for the complete integration of your organization's data communication needs.

Ericsson MD 110 is nothing less than your communication system of the future for your office of the future. Ask for information on how Ericsson MD 110 can fit into your organization's future plans. Today.

Developments in automated mailing

'THE LAST thing I want to see," said Mr John Moody, director of marketing for Pitney Bowes, "is the paperless office." a host of smaller companies, make their money from machines which handle automatically the growing flood of office mail - with equipment such as slitters, guillotines, inserters, weighing machines and frankers.

Mr Moody's worst fears seem unlikely to be realised. While computer and communications companies wave slogans about the office of the future, com-panies like Pitney Bowes and Roneo Alcatel are experiencing a small boom in machines to handle paper.

Ironically enough, the very device—the computer—which has given rise to the promise of the paperless office, is at the root of the growth in the market for automated mailing de-

According to Mr Robert Gardner, managing director of Roneo Alcatel in the UK, this growth has been a mirror image of the growth of the minicomputer. Companies which automated

their administration and their

correspondence using the new, cheap minicomputers discovered a new problem: how to deal with the reams of print-out the machines generated. The only effective answer, especially for the middle-sized

to larger business, is automation in the mattroom. Which is why Pitney Bowes, Roneo Alcatel. Bell and Howell, Mailing and Mechanisation. Boewe and others are finding it hard to keep up with demand. The only sector of the market where growth seems depressed is the small business area, where

even a small automatic franking machine costing less than £700 represents too much outflow of cash in these straitened times. The major manufacturers make ranges of off-the-shelf machines costing-typically up to £10,000 or so.

Above that, there are the semi-custom-built machines monsters which can cost more than £50,000 and which are specially suited to a particular company. Mr Gardner believes the trend

is towards smaller, cheaper machines which can be modified easily, or indeed even thrown out if the company's requirements change.
But the largest automatic

mailing systems—Pitney Bowes top of the line 3100 Computer Output System is a good example—represents the last echoes of the splendour of Victorian engineering in the office. They are equipped with electronic controls, these days, to be sure, but there is a rare mechanical grandeur about these leviathans.

At full stretch. Pitney Bowes claims, the 3100 can produce for 30,000 or so statements a 6,000 stuffed and stamped envelopes in an hour. for 30,000 or so statements a week is about £3,750, or around £200,000 a year. And 20 per

Why the need for such capacity? More than 26m business letters are posted in Britain Sowes, is the paperless office. every day, and Post Office Pitney Bowes, and its prin-statistics suggest the major

> Figures from its own surveys indicate that while business-to-business mail dropped from 36 per cent of all mail to 32 per cent between 1975 and 1980, the volume of what it describes as "advertising, financial and greetings" mail rose from 33 per cent to 44 per cent. In the same period, the number of holders of credit

cards rose from 5m to 12m. So much of this mail is flow ing from businesses to private households and comprises financial statements of one kind or another; and almost all of it generated by computer.

Example

Many businesses today, Mr Moody argues, are simply "factories that produce letters." An example is the Scottish Trustee Savings Banks. The four TSBs have a Glasgow computer centre which processes data on all cheque transactions, savings account withdrawals and deposits and cash with-drawals and deposits recorded by the banks' automated teller

Some 4m customer accounts

are processed every month at the centre and it also posts all monthly and interim statements of account to the banks' customers. That means some 4,000 to 6,000 statements produced every working day and double that number on Fridays. Until the end of last year, the computer-generated state ments were sent to the branch where the account was held for posting. Tedious, time-consuming and expensive. Then the computer centre installed a

This machine accepts continuous stationery from the com-puter printer, "bursts" the puter printer, "bursts" the accounts into individual documents, trims them, folds them, inserts each item into an envelope, seals the envelope and finally franks it with the correct postage.

Pitney Bowes 3100.

This system can run at up to 85 statements stuffed into envelopes a minute.

The 3100 COM costs around

£55,000, but Pitney Bowes reckons the TSBs could get their money back in 18 months. It works like this: the Post Office gives a rebate on volume mail which is already presorted according to Post Code. In the case of the TSB this is quite substantial - around 20 per cent. Now the 3100 is fitted with an optical character reader which

can sente the post code marks printed on the first page of each statement so it is able to separate the statements into batches The second class postage bill £200,000 a year. And 20 per



The latest high-speed mailing equipment from Pitney Bowes, the 6100, is demonstrated at Prudential Assurance in London

cent of that is a very welcome addressing machine.

Mr Gardner of Roneo Alcatel mailing methods are the most sophisticated, anywhere. The British, for example, do not like letters which have been "burst" by machine—and so have ragged edges. Thus, British mailers have to have guillotines to trim the edges. The use of optical mark readers makes it possible for the mailer to treat documents in special ways. The machines can be set up so that a batch of letters are inserted in window envelopes so that the

address always shows in the window. Pitney Bowes is still waiting for Post Office approval for one of its most sophisticated products the remote meter reset-ting service (RMRS).

At present, postage meters— the devices which are actually programmed with the amount of postage credits a business has bought-have to be taken to a Post Office to have credit entered into the machine. With RMRS, the user simply

telephones a computer centre (run by Pitney Bowes), and responds to a set of questions using a special key pad. If all is in order, the computer issues two reset numbers with which user can unlock the meter and enter a set amount of credit.
But all of this is spectacular top-end machinery. For the smaller businessman smaller businessman, auto-mated mailing probably means a set of scales and a postage metre, together with a simple

whether of buy, lease or rent. believes that UK automated Other decisions include identi-

fying which functions in the mailroom could profitably be automated. Labelting machines, example, apply typed computer-printed addresses

envelopes; folder inserters. which need be little bigger than a desk top copier, can save time and energy in businesses which depend on repetitive mailings.

So there are products in plenty—but what is the future for the mailing room suppliers? Will their business not become unwanted with the development of the electronic office? John Moody argues that with the acquisition of Dictaphone. Pitney Bowes has prepared itself for an electronic future.

But the electronic office may be some way off. He sees defensive strategies on the part of the Post Office (discount rates for volume users, together with additional services); problems with compatibility of equipment (electronic office standards have yet to be agreed); and education (it will take a generation which grew up with computers to accept word processing and electronic mail) as the principal barriers.

Meanwhile, the automated postroom business will continue to grow at a minimum of 10 per cent a year.

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A big future is seen for LANs (local area networks) which connect all the equipment needed. Robert Raggett reports

Linking systems: heading for a \$1bn business

THE SELLING of systems for organisation and capable of dual use is sporadic and usually such as printers. LANs allow and one of the world's leading has been little exploited subsequent handing over of cabling together all the elec- permitting each attached termi- brief. tronic equipment found in a puters, data terminals, word processors, copiers, printers, telex machines, telephones will be a billion-pound business some time during this decade. So say analysis of the increasingly look-alike communications and computing industries. In response the number of suppliers of these linking systems, known as Local Area Networks (LANs), are multiplying at a breathtaking pace.

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Wress

A LAN may be loosely defined as a limited distance communi- worker is not economically system for transporting the cation system owned by a single viable, especially since individate, and peripheral equipment as a limited distance communi-

FACSIMILE equipment has

always tended to be the wall-

flower at the office equipment ball—especially in the UK. Although facsimile has long

been haded as on the verge of

blossoming into a widely used

form of communication it has

Needless to say the manni-

facturers claim the widespread

acceptance of facsimile is not

ar away and it is increasingly.

his great technology of the

dexander Bayne in the 1880s.

Facsimile is the transmission

f a document along a telephone

re converted into a reproduc-

where the copy is fed out at a

This information is transmitted

electronically along the tele-

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nal to communicate with any other. Although equally applicable in factories, hospitals and foundation upon which the all-

Facsimile transmission, a specialist function

Always the office

wallflower

used in Japan where the number

In this context the most was, traditionally, the computer. This gave rise in the universities, LANs are generalized 1960s to distributed data ally considered to be the processing in which a number of terminals, each capable of electronic office of the future handling local computing tasks, will be built. The attraction shared the increased memory shared the increased memory of tying together varieties of and number crunching capaostensibly disparate office bhittes of a large central com-equipment is prompted by a puter. In recent years the cost need to increase efficiency and of actual computer processing

expensive electronic resource an increase in the efficiency of LANs will support a mixture first LAN was born. of terminals from different

manufacturers.

National and international communication networks for business users have been the subject of attention, and not a little improvement, for some time. Intra-organisation comequipment as prompted of actual computer processing time. Interest parameters of actual computers of actual comput and that LANs are in the vanguard of the drive for increased office productivity, is the result of the recognition that, in fact, upwards of 60 per cent of information traffic generated in an office only moves within the confines of

a single building or site. a single building or site.

One of the very first LAN implementations was begun in 1973 by the U.S. company Kerox at its Palo Alto Research Centre. In the Centre's computer departments it had been first decided to except each been first decided to equip each researcher with a small personal computer, the Alto. When sufficient numbers of when summent numbers of these were in use, it was then decided to link all stations into a coherent communication system, thus transforming traditional methods of information distribution and allowing peripherals to be shared.

The system-known Ethernet subsequently found its way into every major Xerox facility. This was followed by the furnishing of systems to the Executive Office of the U.S. President, to the houses of Bureau of Standards, and elsewhere. By 1980, in what was a fairly unusual move, the fairly unusual move, the coaxial cable, while the start. The original calculation overcome complete system shut-prestigious computer company, networks generally use twisted behind the Xerox tie-up with down resulting from a fault on Digital Equipment Corporation, pairs. The use of optical fibres DEC and Intel and the the ring.

workers to share these expen-sive resources, and facilitate intel announced their intention an increase in the efficiency of to work with Xerox to develop storing, manipulating and distributing information. Most wider commercial market. The

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As with any highly marketable product, the development of which largely involves the re-working of known technologies rather than the discovery of new ones, there is little consensus amongst present and putative suppliers over the most efficacious way of going about things. At present there are three types of LAN systems which can be considered major -the bus, the ring and the star -with numerous cadet variations on these three themes.
The major LANs can be differentiated on a simple level by their physical pattern of topology. A bus system is one in which terminals are connected. Via special interface devices, on to a length of cable. A ring system, in some senses is a bus with its two end-points joined to make a closed loop. A star system, as its name implies, is made up of a number of cables radiating out from a central point. This central point functions as a switch to allow the any-to-any communiattached to the different spokes of the system.

Physical link

The particular topology of a LAN does not dictate which type of cable -- coaxial, twisted (telephone wire), or optical fibre — is actually used to provide the physical link between communicating ter- strategy, based on Ethernet, will minals. However, the majority minals. However, the majority fail This will happen within of bus and ring structures use two years."

because of the problem of tapping into them without destroying the transmitted signals of light.

The speed and capacity of connection with particular topologies. At one end of the bus spectrum a system can provide a transmission speed of 12m bits of data per second and support over 65,000 connected terminals (Wangnet); at the other, transmission speed is 240,000 bits per second with 65 connected treminals (Cluster-One). Rings, in like fashion, range from 60m bits of information per second and 250 sta-tions (Demos) to 12m bits per second and, for practical pur-poses, an unlimited number of attached terminals (Domain).
The majority of LANs so far announced are based on the bus concept. Chief amongst these is the Ethernet system. Following the 1980 pact between Xerox, DEC and Intel, it was announced

that patented Ethernet technology would be made available. at little or no cost, to any manufacturer willing to embody such specifications in its future product line. So far about 300 manufacturers have signed up, the latest being West Germany's goliath electronics company,

The Siemens' endorsement of Ethernet comes at a good moment. While certainly the top of any LAN popularity poll, a number of U.S. experts have recently cast doubts on the value of the system. Thus, for example, the president of the office automation research company, Strategic Inc is on record as believing that . . Xerox's

patented technology to allcomers, was to Ethernet as a de facto standard. This seems likely to succeed, and despite conflicting reports LAN's similarly has no direct coming from the U.S. official electronics standards body, the IEEE, it seems probable that the official LAN standard for buses will be very similar to Ethernet. Of course, this may not preclude official endorse-ment of other buses or other LAN technologies.

Ring system

Ethernet does not, in its present form, allow voice traffic to be mixed with data. Other bus systems and a number of ring systems—such as Racal's forthcoming PLANET—do. In general ring LANs are more popular with European manufacturers, with a system with a system at Cambridge developed at Cambridge University baving a position somewhat analogous to Ethernet in the bus context. Rings may be cheaper to implement in access and control mechanisms. They also operate at higher speeds and over greater distances. A research project, Universe, is underway in the UK to investigate the feasibility of linking a number of Cambridge rings (or other LANs) through three metre satellite earth stations and Europe's Orbital Test Satellite.

Inevitably, rings have number of drawbacks. Adding a node, by which terminals are linked to the ring, means a temporary close-down of operation. Relatively expensive solutions are also required to

This type of system may be needed by certain categories of

building a local area network establish is to use a modified PABX (private automatic branch exchange) or data switch. This approach is currently favoured companies such as ITT Business Systems and Plessey. The resultant star-shaped network has a number of advantages, not the least of which is that the majority of offices already have some or most wiring installed (the telephone system) and possibly a switch that can be suitably modified. The drawbacks are a relatively low system speed—about 56,000 bits per second—and reliance on control at the centre which means that the whole system is likely to be jeopardised if the switch fails.

Although some front runners

One of the simplest ways of

are emerging (Ethernet and. for larger applications. Wangnet) there is considerable uncertainty as to which LAN systems will stay the course. So much so, in fact, that companies in the UK like Computer Automation are working on both ring and bus LANs. There are some notable absentees. Japanese companies have yet to make any pronouncement of significance on the subject, but perhaps the greatest unknown is the attitude of IBM. Some part of what LANs are all about can be accomplished already with IBM systems. However, the company is known to be adopting an attitude to LANs proper. In March it presented four papers to the IEEE committee concerned with LAN standards. These were what it termed its "best thinking" on the subject rather than a pro-duct offering. This best thinking included (we discussions on ring networks and one on a star configuration.



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a similar machine at the othermeteorological applications and is made in the UK by Muirhead. There are three broad One of facsimile's advantages categories of facsimile equipover telex or communicating ment available for general comword processors is that it can reproduce drawings, signatures and letter headings. It is widely mercial use, with a fourth appearing on the horizon. International standards for each category or group are set by the of characters in the script make it an efficient way of Comite Consultif International Telegraphique et Telephonique. Any machine which meets the CCITT standard will be able to Facskoile has also been slightly more widely adopted in the U.S. than Europe because peing cited at an integral and in the U.S. than Europe because ital part of the electronic of the large distances between ffice. This is ironic because centres and the slow postal communicate with that of another manufacturer which also meets the standard Non-complying equipment can only centres and the slow postal mmmicate with machines of Facsimile has, until now, been the same make.

used mainly for specialist The market for Group dedicated functions usually facsimile machines which takes between four and six minutes within a company or for sending to transmit one sheet of A4 is organisation. For instance, fon of the original page. In magazines often send copy to rude terms it can be compared their printers by facsimile and to a sort of remote photocopying the Financial Times uses it very small. Rank Xerox has had the largest share of this market. Group 2, which like Group 1 uses analogue techextensively for sending copy to nology, can transmit a page of our printers in Frankfurt. A4 in three minutes. The original document is very Specialist facsimile with a closely scanned by a beam of high quality and fine resolution light which differentiates is also used in newspapers for Specialist facsimile with a

Group 2 machines are sold by a range of companies in-cluding U.S. computer manu-facturer Burroughs, ITT, 3M. is also used in newspapers for between dots of light and dark transmitting complete printed pages including pictures. Similar equipment is used quite Plessey, Siemens, NEC and phone line to be reproduced by extensively for military and

At the end of 1980 the CCITI ratified the standard for Group 3 high speed (relatively), digital facsimile. For er of years the market Group 3 machines was dominated by Kalle Infotech, a subsidiary of Hoechst the German chemicals company, with a machine made by Japanese photocopier manufactures The Kalle Infotech facsimile was expensive compared with Group 2 equipment but had the significant advan-tage of being fast—30 seconds or less to send a page of A4.

Lion's share

Although Kalle Infotech still has the lion's share of this level of machine it is not compatable with the OCITY stan-Since the standard's ratification there have been a number of new models launched by companies and prices have been cut in half. Kalle Infotech has also launched a compatible model, but it is one of the most expen-

At the moment there are more Kalle Infotech compatible machines sold by Ricoh in Japan and Rapicom in the U.S. —than there are meeting the CCTTT standard. The faster machines are particularly eco nomic for long distance transmission of documents because substantial saving in distance telephone

now selling Group 3 machines in the UK including ITT (made by Toshiba), Plessey (made by Hitachi), Burroughs, ITT and 3M. and Xerox (made by Fuji-

But even Group 3 machines are beginning to look slow. Advances in printing technology Advances in printing technology using lasers or ink jet systems together with digital transmission (telephone kines are analogue at present) mean a page of A4 can be transmitted in a second. With magnetic memory, such as a disc drive, pages may be sent even faster. In the U.S. Satellite Business Systems, an advanced communications. Systems, an advanced communications network using high speed digital links between company sites via satellite, can send 70 pages of facsimile a

Facsimile has in the past two years become used as a public form of electronic med. In June 1980 the Post Office started the first public inter-national facsimile link to Toronto in Canada from the London Stock Explange A number of other inter

national centres have joined, including New York. Copy sent across the Atlantic is sent by high speed fax (about 2 seconds for an A4 page) via satellite.

The service, known as Intelpost, has been extended to a number of towns throughout the UK using more conventional equipment. British Telepom, which was only legally split from the Post Office last

Autumn, has a rival service

called Bureaufax. Jason Crisp



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telex, facsimile and other busi- than 300 businesses in Britain -

It gives management com-The Plessey PDX was the plete new planning and cost control over the telephone. And lays the groundwork for the office of the future that's now a whole lot closer than you think

Plessey Communication Systems

Plessey Communication Systems Limited Beeston, Nottingham, United Kingdom NG9 1LA Telephone: Nottingham (0602) 254822 Telex: 37201 Dictation equipment becomes smaller but more sophisticated

Battle is on to capture new markets

SMALL IS beautiful in the fastest-growing sector of dicpocket-memo market which last year grew by 10 per cent. Philips, the market leader in while desk-top machine sales dictation equipment in decreased slightly.

Britain, will infroduce

companies supplying portable dictation equipment in the UK. Of these, certain Japanese and German were highlyrated in an independent survey by "What to Buy" BM520; the Olympus Pearl Olympia, meanwhile has introduced one of the minute of the meanwhile has introduced one of the minute of the meanwhile has introduced one of the minute of the meanwhile has introduced one of the minute MC6; Sanyo's M-1001; and National Panasonic's RNZOID. There are at least 55 varieties of portable units now on the

Philips has just introduced what is claimed to be the smallest pocket-memo in Britain, the 660, weighing only 144 grams and designed for the busy executive who demands a high performance but small and easily accessible pocket-memo.

As manufacturers rush to introduce smaller and moresophisticated dictation machines, the appeal of the pocket-memo is well nigh igresistible for the busy executive Suddenly, says Lanier, the U.S.based office equipment group, "it's a lot easier to get a lot more done" with its soon-to-

be-launched micro-cassette "Pocket Caddy" which, it says, "is designed to fit your hand like a glove — like the controls of a well-designed sports car . . . its few buttons are positioned where your fingers are when your hand is at rest, which makes dictation smooth and natural."

Thos. Hill, with its range of neat, Assmann pocket re-corders is just as effusive about its mini-cassette models that are "lovely to look at, delightful to hold, a perfect partner for anyone on the move who needs to communicate, trap ideas, thoughts

Mr Robin Hayward, Philips' general manager responsible for dictation activities in Britain, comments that the introduction of the ultra-small 660 pocket memo to Philips' already extensive range, reflects the trend in market-place towards portable dictation equipment. Potential users are looking

towards smaller machines which combine the

revolutionary Telex communications

Transtel's innovative micro-technology

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Transtel's proven design incorporates a

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network.

has transformed the telex, taken it out of

terminal.

benefits of desk-top machines such as indexing—with the benefits of an easily portable

further models during 1982 and foresees that as more companies turn towards word processing to solve their word output problems, so they will look towards dic-tation equipment as a logical

the new DG-601 model, which weighs 6.7 oz and sells for around £69. This minicassette unit is compatible, of course, with Olympia's desk-top units such as the DG-602 dual-purpose dictation and transcription machine (with electronic index marking and search facility) and the Olympia DG-505 tran-scription unit.

Wizardry

The latest item of technological wizardry from Sony is the tiny BM 510 portable dictator, designed to fit neatly into the smallest hand.

The BM 510 (which sells for about £100 plus accessories) is just over five inches long and only ? in thick, but despite its minature size the unit is packed with numerous useful items and has a twohour recording capability on its micro-cassette.

Features of the BM 510 include a convenient thumb-operated slide-switch control; two tape speeds for selectable record-ing time, counter-inertial fly-wheel and servo-controlled motor giving a constant tape speed and lower power con-sumption; built-in micro-phone, automatic gain control for optimum recording level; an alarm as the tape approaches its end; 3-digit tape counter; and automatic power cut-off system which

prolongs battery life. Sony also claims that the facilities of advanced desk-top dictating systems are now available to executives in a pocket-sized machine. Advances in micro-chip tech-nology have been applied by

the company in the design of its BM 600 dictator-transcriber which uses full logic control to ensure simplicity of operthe busy executive or his secretary—to concentrate on the husiness in hand.

Weighing only 12 oz, it can easily be carried in the pocket or briefcase. However, its controls are designed for ease of operation in either the hand or on the desk.

The BM 600 provides up to two hours dictation on its micro-cassette and its features include an LCD tape counter and an electronic memory to index points on the tape. This memory is ideal for transcribing as well as returning to the same portion of the tape when clarifying a point during a meeting. In addition, it can be used to repeat a chosen section of the tape—useful when one is learning, for example, a new

The UK market for dictation machines for use in the office is approaching £12m a year, while the centralised dictation systems market (including PAX/PBX systems; direct access and separately wired systems) accounts for at least another film. Best-buys listed in the "What

to Buy" survey of the desk-top sector include the Assmann M105; Sanyo's TRC-5050 and Sony's TRC-

The latest addition to Philips wide range of desk-top units is system 800 which incorporates many advanced features; it is fully compatible with other Philips dictation products, using the mini-cassette with a visual "mark-and-

find " facility. The 812 is a dual-purpose unit (dictation or transcription), depending on the accessories chosen. The hand microphone allows the author complete control of the unit, while the new, lightweight headphone and a redesigned foot-pedal give the typist greater flexi-bility than before. Another recent addition to

Philips range is the pocket memo 195/10 which features fast-forward audible scan. Weighing only 240 grams, the slim design of the 195/10 allows it to slip easily into a pocket. The machine uses the mini-cassette (2 x 15 minutes) compatible with the full range of Pailips

Other models in the company's

range include the 590, designed to give high quality recording with single-handed operation; and the tiny 660 pocket memo, already men-tioned, which uses the minim-cassette, giving 20 minutes recording time. The 187 transcriber provides a transcription facility for both the standard mini-cassette and the mini-m-cassette.

Rising sales

Grundig is steadily regaining lost ground in the UK market, particularly since the launch last year of its new desk-top baby, the Stenorette 2300, a full-feature machine about the size of a paperback book. It can be used for either transcribing or dictating.

The Stenorette 2300 closes the

gap between classical port-able dictating machines and desk-top equipment, accord-ing to Mr Gunter Schroeder, director of Grundig's business equipment division. The company's leading market

position in Germany has not orsy been stabilised, but extended, he adds.

As far as the German market is concerned, we may have reached the limit of growth, but increased sales are ex-pected from the export market, such as the UK." Grundig's pocket-size machines (which both won design awards at the last Hanover

Fair) are the Stenorette 2060 (selling for £125) and the 2020 (costing £84.50). The company's diverse products range from several centralised systems to specialised

cational applications. Ten years ago, Grundig com-manded a 48 per cent share of the dictation equipment market, although this declined as low as 17 per cent. The figure today stands at around 20 per cent. While Philips now holds 57 per

cent of the UK market, Dictaphone, with its strong emphasis on centralised systems, has moved up to second place.

hile Dictaphone holds a 62 per cent share of the centralised market, its main productline is still desk top machines and portable units.

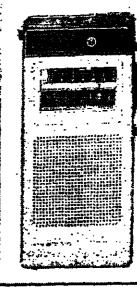
Lanier Business Products, the U.S. based office equipment

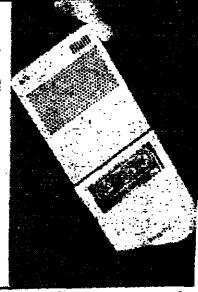


compatible and range from 2 pocket dictation machine with electronic cueing where alterations to dictation can be programmed to auto-matically replay before transcription — to a central recorder that can be accessed from any telephone in the

The four new products are the Pocket Caddy (with electronic cueing) which sells for around £100; the Insight, a desk-top unit with full digital indexing and work-totalising, the Messenger, a sophisti-cated top-of-the-range desk-top machine that allow's the user to remotely separate dictation according to order of importance; and the Micro-matic III, which can be accessed from anywhere in







Pocket-memos from Sony, Grundig and Philips

the world and provides 12 hours' uninterrupted record-

Lanier, with a worldwide turnover last year of \$300m, has Lenier. been remarkably successful in the U.S., where the group also has a 37 per cent share in AES, manufacturers of standalone and shared-logic word processing systems. Last Sept-ember, the group introduced into the U.S. a low-end word-processor called "The Easy

beginning dictation. Lanier's European operations

One" and also launched a small office computer system, "Computereze," designed for

machines in Japan as well as in Georgia, was among pioneers of the endless-loop dictation system which allowed a secretary to start transcribing with seven seconds of the originator

are headed by Mr Haro Murphey, who expects the company to at least double i share of the UK dictation market by the end of the year. The company on began its UK operation ploys 4,000 in marketing, su port and services and h spent more than \$20m in a search on its last eight pe

Michael Wiltshin

Computerised controls assist documentation workflow

Larger companies benefit from centralised systems

paperwork increases every year by up to 10 per cent, the cost of dictating a letter is soaring, too. Some companies estimate that the cost of an average letter, dictated in shorthand to a secretary, could now be £10, while a letter processed by a more efficient centralised dictation system could cut the cost

to £5. Despite the economic advantages of electronic dictation equipment, only 35 per cent of businessmen use these laboursaving devices. The market potential for the growing range of dictation systems is therefore considerable.

Even with the advent of word-processing, many business-men need educating about the time-management advantages of these systems, according to Mr Robin Hayward, general manager of Philips dictation activities in the UK.

executive dictates letters by traditional shorthand methods is rather like criticising a man's driving-a very emotive area." he adds.

The executive who dictates letters by shorthand "is for-getting to take into consideration the time of two people accomplishing a single objective, while his secretary sits around waiting to hear what he's going to say," says Mr Harold Murphey, head of Lanier's European operations.

Centralised dictation systems offer the most cost-effective

means of dictation for the larger company. The main sup-pliers in the UK centralised market are Dictaphone; Thos. Hill International; Harford Lainer: Philips: Peter Sony; Southern Communications and

In centralised systems, instead of dictating into one centralised machine and then manually transferring the tape into another for subsequent transcription, the executive simply dictates over the telephone into a central recorder—a modern equivalent of the old "typingpool " concept.
While centralised systems

The electronic office of the future may be paperiess, but until we find a better way While centralised systems are more readily accepted in the UK than the rest of Europe, the method is widely used in the U.S.

In the 1960s, centralised systems were designed on conventional desk-top machines, linked by selector horses to teleof conventing management's thoughts into information system "bits," speech to keyboard will still be the most efficient input method, says

Dictaphone.
Thos. Hill, the Newcastle-based group which has around 600 centralised installations in linked by selector boxes to tele-phone lines. In the early 70s, a phone mes, in the early ws, a system evolved based on a direct-link principle — the author recording on the same machine as that used by the encouraged by the swift success of its recently launched "MT"

This was Dictaphone's Thought Tank system which revolutionised centralised dicta-tion. Some of today's most successful systems are still based on this principle, but in greatly updated form. The Thought Tank uses a loop of tape so that recording and transcribing can take place simultaneously, while the system decides to which typist's machine an author will be connected, It does this by assessing the typist's known speed and amount of outstanding work-

the result is the fastest turn-round of work for everyone. Mr Bill Cottle, managing director of Dictaphone, explains that word processing units can be handling literally thousands of individual items of work each week: some will be in dictation, awaiting attention, some will be going through keyboards, some will have been transported. transcribed, some will be in the transcribed, some will be in the Second with their authors for editing.

"How to keep efficient control of that kind of work visory control. Access to the standard with the second control of the second control

throughput is becoming a system can be limited either major role of the dictation to the number of authors per input system and will manifest cassette or to a time percentage

WHILE THE quantity of office itself more as information techpaperwork increases every year by up to 10 per cent, the cost of office." he adds.

of each cassette, which means to existing standard PABXor that the supervisor can allocate touch-tone telephone systems work sensibly in accordance and accept dictation from ay-

leader in centralised systems, has two production-control systems, the Time Master and Mastermind, both designed to connect with the dictation input system and log every item of work and check its progress.

Depending on the configuration in use, the supervisor can locate any single item of work by author, subject matter, typist or other categories and discover its exact status. No longer will anyone have to shout, "Who's got Mr X's letter

many word processing units at

work control is significant. As

work charter is significant. As word processing, data process-ing, videotex, electronic mail and similar systems merge into a more cohesive information

processing concept, so the ability to enter fresh informa-

tion into that system will

depend on the efficiency of the

Dictation from an originator's

own desk wil be the only prac-

tical bulk input method—unless we are all to become our own

Britain and claims to have a third share of the user-market in UK centralised systems, is

The British-designed "MT"

uses mini-cassettes and is claimed to be a considerable advance on anything else in the

field: it offers stored dictation

capacity with greater produc-

tivity, control and convenience for both author and typist.

Mr Harold Walker, product manager, says the MT central-

ised system represents a funda-mentally new approach, combin-

ing microprocessor control with 25 years' experience in cen-

Its features include electronic

switching from one cassette to

another, multiple record heads

with accessability to all tapes

in the system, a print-out on stored dictation and the ability

to work with nearly any tele-

phone exchange system without

the need for such costly extras

tralised dictation.

dictation facilities.

keyboard operators.

The trend towards automatic

Modular construction of the system enables an "MT" to be British Telecom. built to meet any configuration of recorders and mix of extra stored dictation capability. Savings on space can be considerable while additional units can be added in seconds.

In a reorganisation last year, Thos. Hill International (which celebrates its 50th anniversary this year) set up two new divisions: the information processing division and the dictat-ing systems division. The first

—and the second distributes the group's own dictating

systems, as well as those of such established names as

There is considerable interest in the marketplace in Sony's new centralised system. The RD 6000 Network system is

provides a degree of per-sonalised service never before

The central unit is housed

in a cabinet weighing just under 73 ib (33 kg) with

approximately the same dimen-sions as a small one-drawer filing cabinet.

Network has a carousel of 24 cassettes accepting up to 18 hours continuous unattended diotation, and is linked to the authors by telephone either internally or externally. This

means that it can be connected

write or telephone to:

Assman and Memocord.

TYPING CENTRE

Among the new centralised systems in the market-

place is the British-designed "MT" from Thos. Hill International. The system's programming facility provides a high level of supervisory control

to Bloggs and 'Co?" which, of these markets products of according to Mr Cottle, is the BDP (Word Processing) — only tracing method in use in another company in the group

ffice." he adds. work sensibly in accordance and accept dictation from ayDictaphone, the UK market with work load. where in the world at no

When an author lifts he telephone, he or she is answered by a recorded voce which asks for a personal core to be entered on the telephote, keyboard. The voice than gives all the instructions and guidance needed to use the system efficiently.

Dictation recording is by voice-operated-relay (VOR) that activates immediately speech begins, pauses while the author pauses and continues until the telephone hand-set is replaced, thus avoiding undue tape usage.

Lanier, which has the largest share of the U.S. market for dictation equipment (39 per cent) has introduced an automated central dictation system, which will be featured at next month's Word Processing Exhibition at London's Wembley Conference Centre.

* Using advanced technology.

to automate the dictation flowfrom author to transcriber, the system reduces "turn-round time" for users with a heavy volume of documentation and

correspondence. Super-Vision III. claimed to be the world's most advanced dictation system is basically a computer to which can be attached a number of separately-wired dictation handsets—and the office telephone system. The advantage this gives is control: the computer can be used to give an instant read-out on a visual display unit of the number of documents recorded over a given period, their length and who made the recording, together with an indication of urgency. Information can be retrieved

claimed to be the world's most advanced computerised central from the system in a block system called "Multi-sort" its own microprocessor which which, says Lanier, allows users to create their own customised reports: data on all the dictaconsidered possible.
Sony's Network probably rates as one of the easiest tion from, say, the marketing department for the last month; or the dictation of any one individual for the last year; or central dictating systems to use, both from the author's and secretary's viewpoint. all the work completed by a particular typist over the last

> The system also has the facility to print out data about the dictated material at 63

system, with automatic cassette change bank, is planning to launch an even more advanced system, the 460, later this year.

lines a minute.
Philips, while continuing to

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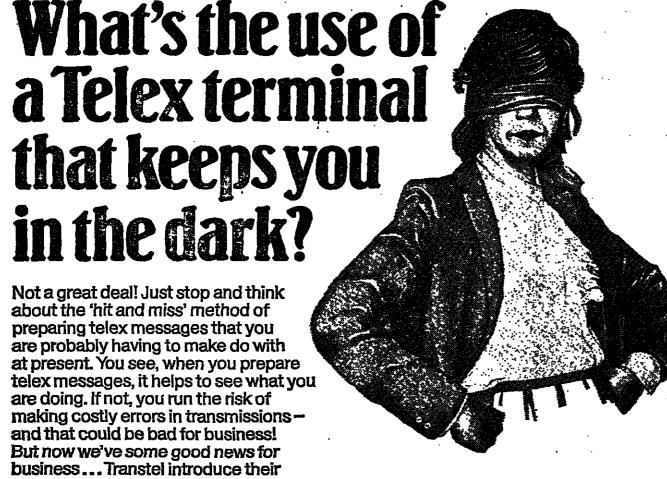
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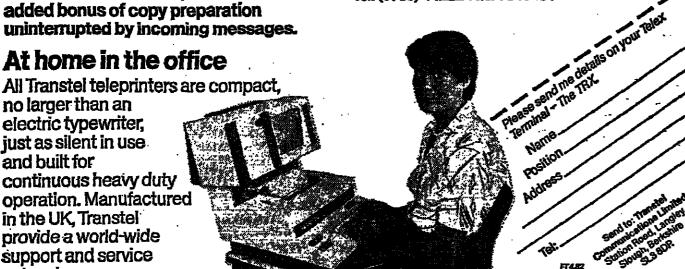
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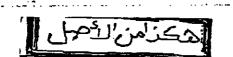
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The benefits that word processing brought to Cadbury

Looking beyond cost-saving

THE EXTENT to which. Among the largest users are whichever of its eight recording more than 40 typists is obvious efficiency of input can make or the sales accounts departments machines is used by the typist but, in the long-term, complex the work somest. This is arrived at by automatical efficiency of Codemic the sales accounts departments as shown clearly at faster with aids such as automatically accounts the sales accounts departments. This is arrived at by automatical efficiency of Codemic the sales accounts departments are whichever of its eight recording more than 40 typists is obvious but, in the long-term, comparatively unimportant.

That kind of sum can be a suited to depart the sales accounts departments are whichever of its eight recording more than 40 typists is obvious but, in the long-term, comparatively unimportant. confectionary division

The department uses two the known speed of the typist.

The company first installed a Datatext IV shared logic we Outstanding work for each rect-link system at its Bourn-systems with four full-time, 11 typist now seldom exceeds 10 typist now exceeds 10 t direct link system at its Bournville, Birmingham, offices, about 12 years ago. This provided visors operating them via visual executives and clerks with an display units. Before word-instant on-the-desk means of processing was introduced there dictating letters and reports, straight to the typist who was to transcribe them.

But by the time Cadbury came to install word-processing equipment, however, that dictation system was ten years old. It had gradually lost recording quality and overall reliability, slowing down the typists almost unnoticeably until the wordprocessing equipment brought the problem into sharp focus,

combined of the

in thating

hael Wiltshin

10m

115.150

Keeping a log

Mr Donald Pitt is word processing development manager for Cadbury, although his department takes work from the Cadbury-Schwerpes, Cad-bury Typhoo and Kenco comoffices at Bournville.

Word processing is used for replies to customers' queries d information requests for the consumer services department, drafting of contracts and conveyances for the legal departments have 38 telephone department, the buying departs solely for dictation purposes. ment's purchase orders and

the head offices of Cadbury, the matically entered phrases and matically comparing outstanddates within standard letters.

part-time typists and two super-

the word-processing unit started, a work backlog, at peak periods, of up to two days began to develop. One of the causes was pinpointed to low quality audio

Poor recording quality was causing word processor opera-tors to back-track over indistinct passages and the propor-tion of work requiring re-typing was on the high side. Cadbury decided to retain the principle of direct link dictation but to bring it up to date. They chose a Thought Tank 193 system from the Dictaphone Company. Executives may still use a telephone on their desk to dictate. For most people, this is

the PABX phone (Cadbury use an ITT 4080 electronic exchange), but the sales accounts departments have 38 telephones The Phought Tank system

ing work on each recorder with

Outstanding work for each typist now seldom exceeds 10 pair-time typists and two supervisors operating them via visual
display units. Before wordprocessing was introduced there
were 60 typists doing the same
(or less) work.

A systems study determined
initially how many typists
would be needed but soon after
would be needed but soon after
which allows word-processing to minutes—which speaks volumes reach its maximum efficiency.

1.000 items

On an average day, Mr Pitt reports, the bureau's typists process one thousand items—although this can be only an approximate measure since "item" covers everything from a standardised memo to a predrafted report. A new management information scheme uses statistical data from the word processor to keep an accurate picture of the department's

equipment and organisation may then be made in advance of problems, not after them. Centralised dictation and word-processing at Cadbury has paid dividends: A cost-saving of

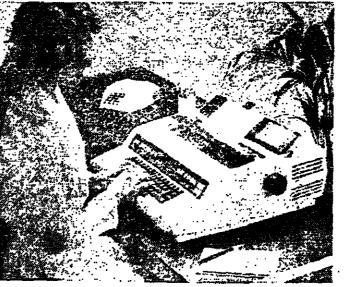
used to justify the dictation and equipment to an accountant," suggests Don Pitt, "but not to me. I consider the more important benefit to be the improved typing service that my depart-ment provides and the timesaving which the cierical and executive staff make now that correspondence is a matter of

telephoning letter references and variable data only."

In fact, far from being content with improvements so far, Don Pitt as a word processing expert, has some personal reservations.

"We must take more account of the job satisfaction element in the future of wordprocessing," he says.
"On a shared logic system, such as ours, the operators are keying in bits and pieces of data dictated to them without ever seeing the finished results of their work in hard copy. "We cannot regard typists as

automatons; somewhere along the fine technology must be applied to making the work interesting as well as efficient." That worry comes from one of Britzin's leading exponents of suppliers, take heed.



هكذامنالأجل

Electronic typewriters

The Xerox electronic typewriter, model 620 (top, left) includes a display that shows the material being typed. It also allows the operator to scan through a document to see an area of text to be revised. Top, right: the Xerox 615 model which can play out a full page of errorfree copy for financial documents and multipart forms



Olympia's ES 180 word-processing system, above, allows typists to correct errors and make alterations to text while those parts which were originally correct are retained in the system



The 293 centralised dictation system from Dictaphone

What a centralised dictation system did for the Automobile Association

How to speed up correspondence

centralised dictation system is matic, but a bank operator indicated by the way it has supervisor is always on hand

In 1979, the AA decided to supervisor by a light on the install the 0260 automatic panel. The supervisor presses remote-controlled dictation the priority button and the system from Philips. The system, based on the minisystem from rimings. The cassette is ejected after that system, based on the minition for the supervisor to take cassette, was compatible with away for immediate transcripother dictation equipment—
again from Philips—used by the AA at its headquarters at the telephone at the conclusion. Fanum House, Basingstoke.
The 0260 dictation system has thus been installed at AA offices throughout the country. There are 10 machines in the Newcastle office being used by 400 dictators answering insurance queries; eight machines at Basingstoke and others at headle Hulme, Cardiff and Erskine, Scotland.

Used for replies

The automatic remote-controlled dictation system operates over the internal tele-thone lines. Authors on prealected internal telephones vishing to dictate dial pre-letermined digits to gain access o a machine.

On connection to a free nachine, the dictator hears a one lasting for three seconds in the machine then switches in to record. There are eight incut record. There are tight intation functions such as ecord, stop and playback—which are controlled by the elephone; thus, by dialling a ertain number the author is ble to rewind the tape, listen and make write the district. nd maybe revise the dictation. The machine, which uses 24 dini-cassettes, can therefore the up to six hours unattended although lachines themselves are in peration 24 hours a day.

speeded up the processing of to deal with letters which correspondence by the Autorequire priority attention. If mobile Association, which has a this is the case, the dictator membership of 5.3m.

dials digit 8 which alerts the cassette is ejected after dicta-

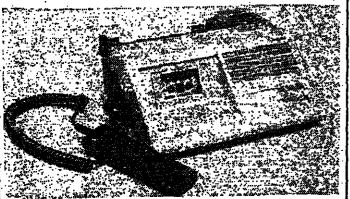
> of dictation, an end-of-letter mark is automaticaly made on the index slip. All typists and supervisors use the Philips 304 automatic transcriber machine, enabling them to immediately locate the end-of-letter mark or a special instruction mark.

The supervisor maintains a log of all dictation, entering the name and department of the author, the length of dictation and time received. An index slip is attached to the cassette, then placed in date and time sequence for selection by the

The benefits in comparison with a file system where the dictator sends the cassette and dictator sends the cassette and accompanying file to the centre for typing—are innumerable. Firstly, by using the 0260 remote-controlled system, the dictator can keep the file and have it at hand for dealing with firstly controlled. further enquiries.

Secondly, there is no opportunity for the file or dictation to be lost in transit—and whilst the author is dictating, the phone is engaged and he can-not be interrupted by phone calls. Furthermore, the user can dictate a letter immediately over the phone, rather than doing it all perhaps at the end

Michael Wiltshire



The 812 desk-top dictation and transcription unit from Philips

Given more time to think, an office clerk could come up with the odd original idea.

In 1905, a young clerk in the Swiss Civil Service, a man with a mediocre academic record, wrote a paper which was to become known as the Special Theory of Relativity.

Albert Einstein had learnt to think.

His method was to hold the problem of the moment in his mind relentlessly and without distraction.

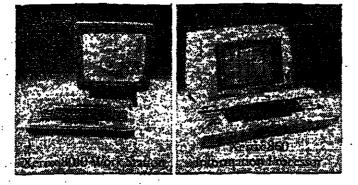
One way he achieved this was by never bothering to commit facts to memory. He felt it would clutter his mind, needlessly. There were better uses, he thought, for the human brain.

Imagine how much time and potential people in business waste with routine workaday drudgery. Chores that simply have to be done before the real work can be started.

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THE ELECTRONIC OFFICE XII

An increasingly effective role for the ubiquitous telephone

New telephone terminals offer greater flexibility

EVERY OFFICE has at least one piece of hardware which makes an electronic communications network feasible. The ubiquitous telephone which in the 1980s promises to play a key role in the development of

Companies are only slowly coming to realise that a cable-linked device to every office and most private homes offers considerable benefits when linked up to other equipment, such as a video screen. Moreover, data can be rapidly transmitted to a computer via a telephone line.

The telephone promises to become even more effective — in spite of the effective — in spite of the challenge from satellites and specially laid cables—because of the rapid technological development of optical fibre cables, which will enable a dramatically increased amount of telephone traffic to be carried.

But it is the viewdata systems, such as British Telecom's Prestel which are spearheading the revolution in telephone use. Unfortunately Prestel is not turning out as successful as some of the other videotex systems that have been developed to use the

Prestel has only about 13,000 subscribers, about a quarter of the number originally con-sidered likely by this stage, and the number of times each Prestel user looks at a page

The problem with Prestel was that it was marketed too generally to both private and users. prisingly, the system has fallen between these two stools and few private subscribers are in the network One drawback is the cost of using the information kept within the 200,000 pages plus the cost of the telephone call. A residential subscriber could easily run up an annual bill of £200 for quite basic information, according to

Main appeal Prestel's main appeal so far

has been to business users. In the travel industry, in particular, the system is used to obtain information about airline and train schedules and package tours. There is also

of videotex systems—linked to into private viewdata systems room or on a customer's prethe telephone network-have with a new subsidiary. Disc. mises, information such

become successful. The Lon- Debenhams is also beginning to don Stock Exchange's Topic use the system internally. Directors have viewdata-edapted televisions at their home. On Sunday nights they telephone the Debenham viewdata comoffering its customers viewdata as an addition to its computer puter at Tauriton, Devon, for detailed figures on the previous week's sales in all the stores

held in stock by other BL Branching out throughout Britain. together by a system which consists of Philips Business Equipment viewdata terminals. linked by privately rented telephone lines to the main BL computer centre at Redditch. To avoid high telephone costs being incurred by dealers far from Redditch, relay stations

Dealers can also use the system to call up a large amount of information for a customer in the showroom, such as a steadily growing base of prices, specifications, and even users seeking market information motoring press appraisals, apart from being able to tell the custies, share prices and similar tomer on the spot how quickly

share price service, for example,

is flourishing and even IBM is

BL has developed a system.

Stocklator, which enables dealers to locate any BL car

Dealers

throughout the country.

Rediffusion Computers has the largest share of the market for private viewdata systems. It has sold 120 systems, including among its customers two retail outlets - Milletts, the camping and clothing shops, and Findlays Hardware in Scotland.

For the businessman on the move, portable terminals have are being set up in the main een developed which can link into a private viewdata network or a public system like Prestel.

The system, made by Zycor, is called Teledek 5000 and is contained in a briefcase. This includes an alpha-numeric keyboard, acoustic couplers and dem which uns telephone network. Mr Ken data.

But while Prestel has not caught on in the way at first hoped, other private viewdata store chain, has branched out receiver, perhaps in a hotel

orders can be sent on the tele-phone lines to the main

The system costs about 2700 and has already been ordered by European banks, newspape and companies with large sales There are other, less sophisti-

cated, ways in which a telephone can be used. The commercial possibilities of the answering machine have hardly been e plored. The machine could be used as a means of communication on a day's stock levels between, for example, a supermarket chain and its branches or in taking orders for advertised goods and services.
A scribophone, or writing telephone, enables the user to display drawings or graphs in telephone. By writing on a sensitised electronic pad, the

speaker can alter a drawing during the conversation. A portable telephone also has considerable advantages for the executive on the move who wants to receive calls when phone. The only drawback is that it is illegal — although widely available — since the Home Office will not release the

necessary radio frequencies.

David Churchill

The Plessey Prestel-viewdata terminal which incorporates voice and communication in a compact desk-top unit. It has been described as "the " telephone of the decade which will bring voice and data communication to the fingertips of most businessmen

A surge of growth in the mobile communications sector

Systems for the man on the move

ket for mobile communications systems in Western Europe, despite the recession. Factors behind the industry's growth are strides in the technology which improve equipment design and keep costs down; the need for companies to keep in contact with essential personnel so that they can adapt quickly to changing situations; and, to a lesser extent, a desire to reduce fuel costs.

One of the main reasons why mobile communications has not become a larger sector of the telecommunications industry is due to the stringent regulations which govern the allocations of the radio frequency spectrum, coupled with the general con-gestion of the airwaves. Mobile radio has to compete

for air space with other services such as broadcast radio, television, and even military services, all of which seek to increase their existing alloca-

However, Citizens' Band radio system has now become established throughout Europe, following the boom in the U.S. in the mid-1970s. Britain was one of the last countries in Europe to legalise Citizens' Band radio in November last

CB radio offers to small businessmen and to the public alike, a very cheap means of communication, albeit with a limited transmission range of about 10 miles or so. Though much of the available channels on CB service seem to be zimed at pure social communications, it does allow a small service company, for example, operating in a limited area, the opportunity to change work schedules at short notice and warn of problems.

of CB radio-and its limitation repeater. In the UK, services -they might be encouraged to are offered by companies such adopt a more professional as Stormo and Motorola.

This radio-paging system, the Access 1800 from Multitone, offers either single- or dual-channel operation on one or more frequencies, with access via manual control units or via telephone and remote contact facilities

Germany.

dictated that each business had Burndept Electronics. Storno a dedicated frequency in a part of the U.S. General Electric group, and AEG Telefunken in regulations have been relaxed in Britain and the concept of community repeaters is now accepted, although it has been operating for many years in countries such as the U.S. and

This system means that a business with only two or three vehicles can share a mobile system with several other users, so capital costs are lower and the company still gets a private

In the U.S., companies such problems.

Many mobile equipment Electric operate more than manufacturers believe that 7,000 such repeaters, with up to once companies see the benefits 200 customers connected to each

adopt a more professional as Storing and Indicated.

Pye, which is part of the mobile telecommunications
Until recent years it was not afford full mobile radio systems because Home Office regulations are storing and indicated.

Which competes with private mobile telecommunications to market leader in mobile radio telecommunications companies, such as Air Call.

Last May, British Telecom started to implement its larger, improved service. Air Call says

Large mobile radio equipment users include police and public utilities. These organizations often have some of the most sophisticated mobile systems which provides high security and extra facilities. North Thames Gas, for example, allows its engineers to have automatic dialling just like a normal telephone system.

But for the executive on the move, in-car telephones are becoming extremely popular. However, the provision of in-car telephones has not been without problems. At one time, more than 1.500 people were on the waiting list in London alone to join British Telecom's service which competes with private mobile telecommunications companies, such as Air Call.

Last May British Telecom

that its car telephone facility is growing at a rate of at least

Is growing at a rate of at least 10 per cent a year.

Today's car telephones can either be operator assisted or automatic, allowing the user to dial national and international calls directly from the vehicle.

For those people who are moving around on foot, radia pagers are becoming more pagers are becoming more sophisticated, rather than simply bleeping. They are capable of transmitting short voice messages. Air Call, for example, has just completed investing in a new computer

control system for its network of radio pagers—it is the largest service in the UK outside British Telecom's.

Its national network of pagers allows the customer at his own premises to record messages into the computer which are immediately transmitted to the relevant pagers up to 40 miles away.

British Telecom whose equip-

ment is provided by companies such as Multitone and Pye, completed updating of its network this year. Users of the BT system can opt for a nationwide facility or for the paget to be activated in one of several of the 40 zones into which the country is divided. There are occasions, however, when motorists do not need direct communication with the office, but they may write.

office, but they may well require information about motoring and weather conditions which could hamper a journey to an important business meet-

In West Germany and some other European countries, a system called ARI is now in. operation which automatically interrupts radio programmes when a problem arises. Since the country is divided into zones, the motorist only receives information releases information relevant to the area through which he is driving in Britain, the BBC has also developed an automatic radio

information service for motorisis, but problems with allocation frequences and money to min the Carfax service is hampening introduction. its introduction.

Elaine Williams

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its 5 times faster. If you've ever used dry transfer lettering, you know how long it takes to complete the job, and then a letter or an entire line can be crooked. Not so with Kroy lettering. All the letters are in a straight line. Your job can be completed 5 times faster than dry transfers, and at least twice as fast as stencil lettering. There's no time lost waiting for outside typesetting.

It's economical. Kroy lettering can cost you less than 4p a word. You can expect the Kroy 80 lettering machine to pay for itself in a very short period of time. Find out the many ways of using Kroy lettering cost effectively in your business from our free brochure. Just complete

It's professional quality. Look at the headline of this ad. Compare Kroy lettering with hand lettering or stencil lettering. There's no contest. Now compare it with dry transfer and commercially set type. Notice how Kroy lettering has the same high quality.

It's used everywhere. In our free brochure, you will see how people are using Kroy lettering. Because Kroy lettering will make you look very professional, you can

expect to make a better impression.
It's perfect for making presentations, for title boxes on engineering drawings, for overhead transparencies, flip charts, microfiche and slides.



on the model you choose.







Imagine using it for newsletters and leaflets. Office forms, name badges, labelling, file folders, T.V. story-boards, note books and charts. Anywhere you need words you can use Kroy lettering. Now think of all the things you can do with Kroy lettering.

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Piesse service of P	i me my free Iuli colour brochure and Groy lettering.
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Japan threatens the dominance of Xerox, says Jason Crisp

The fight intensifies for the copier market

THE JUNGLE warfare being waged in the copier industry shows little sign of abating Despite occasional efforts by some companies to raise prices the overall trend continues-downwards. There are ever more machines on the market, often wearing several different colours, while the advance of the Japanese into Europe and

the U.S. continues. Still dominant but increasingly besieged is the Xerox - Xerox, Rank Xerox and Fuji Xerox — which has the largest revenues both from its installed base and new cus-

Although Xerox has fought back flercely with new products and undergone major cost-cutting exercises, both in Britain and in the U.S., it faces the increasing problem of the apparently unstoppable advance of the Japanese.

At the front of the Japanese column is Ricoh, which claims to have the largest share of the world market in units. In the UK, Ricoh copiers are sold by Kalle Infotech, a subsidiary of Hoechst, the German chemicals company, and by Nashua which, in spite of its name, is a U.S.

In the U.S. they are sold by Savin. Within the past two years Ricoh has begun selling copiers in both markets under its own name for the first time. Its agreement with Nashua is not being renewed.

The other major force in Japanese copiers is Canon which has been making significant advances with a strong range of competitive products, says Mr Philip Oppenheim of What to Buy for Business.

Five areas

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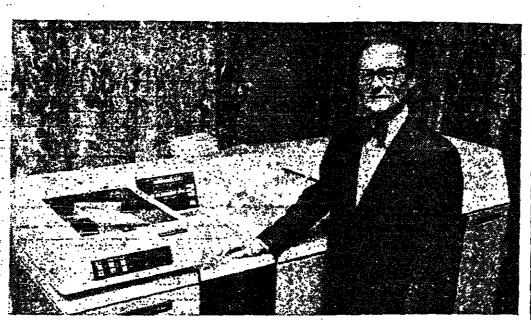
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to the

Broadly speaking, the repro-raphics industry can be divided into five slightly overlapping areas. At the top of the range there are offset duplicators which offer a very high quality and a low cost-per-copy, but have a high capital cost.

which are very fast, high quality and have ingenious devices for collating reports. It and professional practices. is an area dominated by Xerox trading up from coated paper which would claim a quality of copiers or using bureaux. reproduction to challenge offset

are IBM, Oce and Kodak. At price by more than a half withthe very top end of this range in 12 months. are expected to enter this area. The third area, the low and coated paper copiers. Although medium-speed plain paper coated paper copiers start becopier, is the front line of com-



Mr Roger Leeks, marketing director of Kodak, reports "a very encouraging number of installations" for the recently-launched Ektaprint 165 AF plain paper --- copier-duplicator. The equipment may be bought or rented

tors include Oce, Gestetner, Alcatel Olympia, and Rank Xeroxsome machines are Japanese-made.

Canon Ricoh, Minolta, Toshiba, Sharp, Mita variously as Mita, include U-Bix. Gestetner, Océ Imperial and Olivetti), and Cybernet (sold as Decimo, Hermes Facit and Roneo).

Very broadly, the market can be divided into two: on one hand, there are large organisations which will have number of small machines distributed about a building as well as a large fast copier for long runs of high quality for reports. Copier salesmen argue that distributed small copiers save time as they are near at hand ut have a high capital cost. and reduce queuing. Office Second, there are the top-of-managers say it encourages the-range plain paper copiers staff to make too many copies. The second major market area is with small businesse

It is in this area where, perduplicators and the copier is haps unsurprisingly, there have been the most dramatic price The other main challengers cuts—sometimes a customer in this area, for the moment, may find a copier has fallen in

problems for the fourth area,

petition and there is a host of copier - prices can go up to contenders. European competi- £1,000 at which price it is apparently never-ending plunge possible to buy a plain paper in copier prices is the forced

> static copiers have a number of disadvantages. The quality of reproduction is often poor, the feel is slightly unpleasant such that is often suggested — by plain paper copier salesmenthat they can only be used internally within a company. The cost of the paper is significantly higher than that for plain paper copiers and they can only cope with fairly volumes of copies.

Withdrawals

It is generally acknowledged in the industry that the coated paper copier is at the end of its with precious few new models in the last 18 months and several withdrawals from the market. Nevertheless, there is expected to be a demand at the low end of the range for a very cheap copier used only for

Finally, there as the steneil duplicator—very cheap, even if slightly messy and troublesome which has been long outstripped by the photocopier. still has a substantial proporduplicators.

slow to realise the impact of copiers on its business, its own for several years which is made by Rex Rotary, its

changes in selling methods While one day it may be economic to employ a salesman, complete with company car, driving round to clients the next day he has become the largest cost item in the product as the

price tumbles. It is a problem felt most keenly by Rank Xerox which grew with a monopoly in plain paper copiers and high prices. Faced with Japanese competi-tion, using dealers' services inof costly direct sales forces, Rank Xerox has had to reduce its own staff and find new ways of selling.

These include sales by tele phone, setting up of retail stores (both in the U.S. and the UK) and even selling by mail order, which not so long ago would have been unthinkable.

One aspect of Japanese competition which cannot make the Xerox management sleep any easier is its gradual move up market. Canon, for instance, has a copier in Japan which is faster than the top of the range Xerox although it is less sophis-

tion of its sales in stencil set to keep on going and customers can only welcome the Although criticised for being fall in prices. Although the ow to realise the impact of photocopier industry would Xerox does not face any comThe quite dramatic price copiers on its business, appear to be doing nothing to
petition except from offset cutting in plain paper copiers Gestetner has been successfully help the much vaunted paperduplicators. Canon and Ricoh has begun to cause significant selling a plain paper copier of less office, there is a move toappear to be doing nothing to "intelligent copiers." which can reproduce informa-Danish subsidiary acquired in tion stored in a computer or

OCRs and OMRs are now moving into new territory

Data processing developments

already exists and the computer needs it for some purpose, then are basically

alternative procedures. Either an operator sits at a keyboard, reads the material and keys it into the system or, what is more likely if the throughput justifies it, the system employs optical character recognition, OCR, to do the same job at much higher speeds.

For many years, OCR has figured mostly in banking and in particular to read the millions of cheques that have to be dealt with daily. But the advent of text processing in smaller business systems is bringing OCR into a different focus. In addition a similar technique called optical mark recognition (OMR) has carved a market niche where it is cost effective to sake simple, single line marks on a matrix form of some kind in order to record business data-stock levels for example.

Most of the major computer companies offer both financial document and page readers. Burroughs for example has a machine that can be loaded with up to 50 typed pages and will read them at the rate of

Increasingly such machines are able to recognise wider ranges of founts (character sets). The Japanese company Totec has just launched in the UK a unit that can deal with OCR A and B (the original "computer" founts) and several others as well including Courier 72, Prestige Elite 72, Courier 12 and Pice 72. Of desk top size, if costs under £7,000 and is being marketed by

Mitsui Computer. Such machines can overcome an important bottleneck in sources when they could be employed on the more suitable printing founts (for example lasks of editing and formatting, the Times Roman of this page) They also mean that the could be dealt with. Mice's typewriters can become

IN THE general data processing input devices for the word processing system. This might well typed document of some kind save some money since type-already exists and the computer writers are a great deal cheaper than visual display terminals. Furthermore, the typist does not have to be the world's best because the WP terminal's screen can be used to correct errors or improve the format

> marked up copy draft. The word processing system operator is thus left free to edit quickly the copy on screen to meet the author's corrections and print out the fmisned copy for approval,

An interesting idea stemming from the word processing application is for the preparation of telex mesages. There are already, "electronic! ways of doing this and in any case new telex machines are coming on to the market for the purpose using screen-based approaches. However, if the OCR reader is already in the office then, as with word processing the message can be typed on an ordinary machine and fed into the OCR unit. It is technically only a short step to convert the result to telex code and the Mitsui machine will do

Characters scanned

Technically, the process of optically reading what is present on the surface of the paper is not too difficult with modern electro-optics. In most cases arrays of tiny photocells are used to scan the characters line by line; changes from black to white at character edges become signals. The bigger problem is to determine, from the signals, what each character

Thus, early OCR could only cope with formalised characters some word processing instalia- cope with formalised characters tions in which WP terminals of the kind seen at the bottom can be ned up keying in long of cheques. But as processing existing documents from other power has become cheaper and software cleverer ... ordinary

of machines that can cope with able to schedule manufacture hand-printed capital letters. At more quickly. Another mamithe moment, continuous hand- facturer uses them to collect writing is too much even for the latest computers to convert to a reliable stream of digital signals.

But the two or three words of a signature can be recognised sufficiently to say that the signature does belong to the man who wrote it rather than a forger, Recognition in the case of a machine recently designed by Transaction Security of Guildford, is as much dependent on how the words are written as it is on what is written.

As the writer's pen moves, its position is digitised at frequent intervals. But both the geo-metric and the rhythmic properties of the signature are extracted and reduced to a unique and personal sequence of numbers which can be encoded on to a say, a credit card or an identity eard. Thus when the card owner is trying to obtain cash or get into premises, if the number derived from the on-the-mot signature does not tally with what is on card, he can proceed no further.

In offices concerned with like stock control, things schedules, quality control reports, sales orders or insurance premium collections, OMR has a lot to offer.

Instead of a keying operation using order forms, shop floor reports or other pieces of paper filled out at the source of the data, the originator of the data himself makes marks in boxes on a form that the computer can immediately read. The forms up to A4 in size, can be read at about a yard a second into the computer, some 19,000 such documents an hour

One of the UK's OMR proponents, Data and Research Services of Milton Keynes, says that the car industry has taken much interest in OMR. One big company asks its distributors to fill up such forms as official orders. They are sent through the post to the maker Today, there are a number who, via the computers, is then

quality control information from the shop floor.

Data Recognition is a leading UK OMR company and has, for example, provided equip-ment to food wholesalers who use the forms to collect orders. There is no doubt, however, that in terms of activity and capital expenditure on OCR equipment, the banks and other financial institutions are out in

Six passes

For many years the major banks have bad sorting halls full of 20-pocket cheque sorters, allowing all the necessary sorting to be done overnight in as little as six passes. IBM, Burroughs, NCR and others are all involved and Britain's main maker in this field is OCR Scandata Scandata's latest offering is

the 2280, an advanced machine that is able to scan documents like cheques at up to 30,000/hr and A4 pages of text at 4,000/ More documents can be loaded while the machine is scanning Characters which fail to be recognised are handled simultaneously with the scanning by a special work-station which permits re-entry of non-recognised characters from a video image displayed on a VDU.

Most of these developments are concerned with cost effec tive high speed throughput. Recently machines have appeared that will process the "turn-around" payment documents used by the utilities, local authorities, insurance companies and others, at the same time on one machine dubbed "one step remittance processing. Interbank credits will prob

ably also be dealt with by OCR Scandata has already installed two machines for

Geoffrey Charlish

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You've never seen a word processor like Dual Display. A full screen shows 66 lines of 102 characters per line exactly as they will be printed, with bold type, justification and proportional spacing, but without any confusing codes or prompts.

You can zoom-in to 33 lines, further minimising the hances of error.

An independent keyboard has a thin window displaying up to 37 characters, making typing easier. It highlights errors and gives the operator instructions.

Up to eight of these keyboards can run on the one system, each one costing only about the same as an

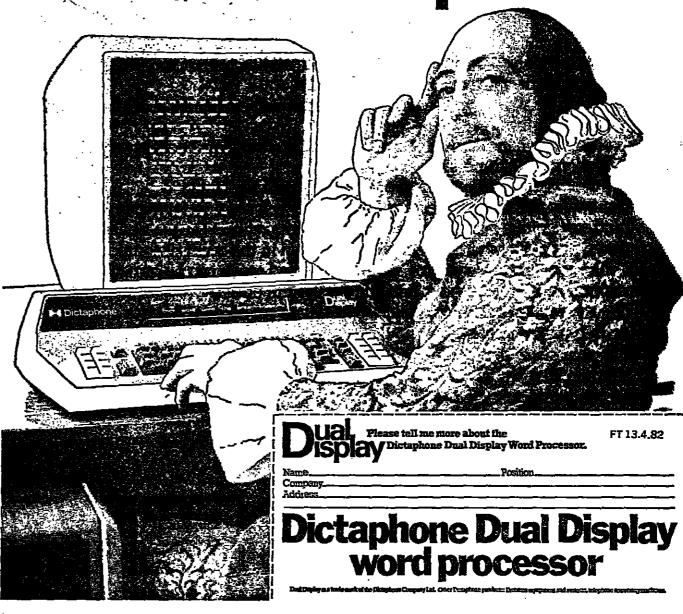
Dual Display permits editing and printing while the peessor is performing other functions such as sorting. www.cation or mailing.

With specialised accounting software, Dual Display secomes a powerful multi-function processor, randing invoicing, wages and book-keeping, for example,

Shakespeare would have been speechless. Send the coupon to the Dictaphone Company Limited. Regent Square House, The Parade, Learnington Spa, Warwickshire. CV32 4NL Tel: 0926 38311. Telex 312327.

Dictaphone
A Pitney Bowes Company

More lines&characters than Shakespeare.





You don't have to be a higuser of telex to be able to cut your costs and improve your communications with a TELEX MANAGER. With prices from £8,500 it will pay

for itself quicker than you dared to

This is a new concept in telex. It means telexes can be sent and received anywhere in your organisation. Between departments. Or long distance. And all without any paper tape to jam or tear or get mixed up. It is so easy to use that no one need. be frightened of sending a telex.

Telex messages are created at quiet, good looking display terminals with easy-to-read characters-a well known Ferranti feature. Text editing facilities make it easy to get the messages correct, and you can lay them out clearly so that they're easily nnderswood.

You don't need to know how to send a telex and you needn't keep dialling busy lines. TELEX MANAG looks after all that and makes the call short as possible to save you costs, so out priorities-sends the most urgen messages first. It will send the same telex to many different places on one word from you

As for incoming messages, they accepted without interrupting the operation of the terminal, and can be sent straight to the department that wants them.

TELEX MANAGER is great for busy telex system and can grow to off all its advanced facilities to meet larg message switching applications. Check your telex bill now and

you'll get the message.

TELEX MANAGER

A new concept in teles

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	Computer Systems

THE ELECTRONIC OFFICE XIV

Word processors

Small business computers

Desktop computers

Facsimile equipment

Small business computers

100 Shillion peramum

Desktop computers

Volume (1,000 units):

Wickham

in their products.

NCR, Burroughs and Savin

microprocessors. The Conver-

gent hardware has formed the basis of these companies' moves

IBM has also made its move

sor used by Convergent

technology. The computer

giant has apparently been

Another new factor in the

market are chip makers like

puter market.

into the microprocessor era.

workstations" — ad-

Dramatic changes are under way in the U.S. computer industry

U.S. suppliers aim to put a computer on every desk

THE GROWING U.S. MARKETS

Value of office automation equipment markets in \$m, based on shipments

. 1979

1,474

241

Market Summary of

Constant 1980 prices.

Vorldwide Annual Ship

1.200

1.992

1980

1,169

93

1981

129

1982

2,045

9,534

170

144

OFFICE AUTOMATION used to mean copiers, electric typewriters and a big computer hidden away in its own clean

Today, the picture is changing dramatically. The mainframe computer is being widely replaced--or supplemented-by a collection of smaller computers. Word processors are supplanting the old fashioned typewriter, and printers, electronic filing systems and electronic mail systems and taking over tasks of producing, storing and distributing documents.

By the end of the 1980s, vir-tually all office workers, managers and executives will have access to computers. Industry estimates suggest that in the U.S., there will be approximately 10m desk-top computers by 1985, representing a total value of more than \$250n.

Like it or not, the "office of the future" is on its way and for many in the U.S. it has already arrived. The goal of U.S. office equipment suppliers is to put a computer on every desk, and nobody seems to doubt that they will do it. The most important trend in

office automation is towards distributed computing—groups of small computers, rather than a single centralised system. Microcomputers are becoming powerful enough to do many

of the jobs that only the big mainframe systems could do Built around microprocessors, dicts.

these systems offer cheap com"The microcomputer indusNetworking puting power, so cheap, in fact that businesses are buying them in huge volumes. Sales of small computers—personal

puters, word processors, desktop computers and minicomputers will total some \$40bn by 1985, up from \$11bn in 1980.
The changing pattern of business computing will have enormous repercussions in the U.S.

computer industry. Those that

adapt will prosper, and those that do not are in for hard imes, warn industry analysts. Already, signs of the upset ere emerging on the balancesheets of some of the best-known computer manufacturers. Convergent Technology, Santa Clara, Celifornia. Earnings of major computer manufacturers such as Sperry, Burroughs and NCR have

Minicomputer manufacturers such as Digital Equipment Corporation and Hewlett Packard have faired much better. HP entered the office com-

dramatically declined, and even

IBM's growth rate has slowed

into microcomputers. puter market just a year ago year, the company introduced its personal computer—built support the concept of the "inaround the same Intel microteractive office." This month HP will introduce in the U.S. an electronic mail system for users of its HP 3000 minicomtaken by surprise by the enor-mous demand for this small

HP mail will allow messages low-cost system sold through to be passed from one terminal to another around an office, or to another matching computer in a remote location. But even the minicomputer

makers are threatened by a new generation of microcomputer builders. Within three years, microcomputer-based systems that perform as well as or better than today's minicomputer will be available for onefifth to one-tenth of the price, according to Gnostic Concepts, a California market study

group.
Minicomputer makers will be Intel and Zilog, both of whom are now building machines for forced to move up to higher performance-level machines in office use around their own order to survive, Gnostic pre-

try has been far more aggres-Once the conversion to small sive in using new technology

than the more mature minidesk top computers is accepted. computer and mainframe supthese machines talk to each comments Robert vice-president of other, and to allow them to share expensive peripheral devices like printers or large Vector Graphics, a California microcomputer manufacturer. Several of the established data storage systems.

The answer is the "local area network"—a cable connames in business computers have recently made moves to necting each of the pieces of computer equipment in an office building. To enable a diversity of machines to comhave all signed deals with one municate with one another is of the most successful new a highly complex problem, and one that is occupying the microcomputer manufacturers energies of most U.S. computer manufacturers today. Convergent is supplying the

Several different minicomputer companies with have been proposed by various companies. Leading the field vanced personal computers are Xerox, with Ethernet, and built around standard Intel Wang Laboratories with Wang-Each uses a totally different approach. Ethernet is a "baseband" system which uses a single channel to pass data from one machine to

> Wangnet uses multiple channels but can handle video and voice communication as well as data communications. The proponents of each argue that theirs should become the industry standard.

So far, Ethernet, which is sponsored by Dec and Intel, as retail shops. Customers now face a wait of several months well as Xerox, has most sup-port although a decision by the after placing their order for a "Baby Blue." standards committee of U.S. Institute of Electrical and Electronics Engineers to set a slightly different standard for Winners in the growth of small business computers built around microprocessors are local area networks has been a also likely to include the top major blow for Ethernet causpersonal computer makers— Tandy and Apple, whose most advanced products fit into the low end of the business coming companies such as Hewlett Packard to drop its support for the system.

IBM recently revealed that it, too, is soon to introduce a local area networking scheme.

At a technical conference in

the U.S., IBM engineers described a baseband system that may be offered for linking IBM office equipment.

Professional workstations

1978-1982

43.2

33.4

50.1

Another important trend in the U.S. office automation market is towards including managers and professionals in the use of personal computers, Managers, it seems, are less ready, or able, to spend the time needed to learn how to use complicated word processing and data analysis programs than are their clerical helpers. Machines for professionals are therefore expected to incor-porate highly advanced features that make them more "user

Among the first "executive workstations" on the market is the highly acclaimed Kerox "Star." This machine has a simple control mechanism called a mouse that can be moved around on the desk top to direct a pointer on the screen. The user selects the function he wants by pointing to one of a series of symbols on the screen and simply presses a button to make it happen.

Expected soon from Xerux and other manufacturers such as Apple and Digital Equipment Corporation are even smarter microcomputer systems that can carry on several tasks simultaneously.

He might, for example, print a file, enter information into a data base and receive electronic port, all at the same time.

i.

Such systems, the manufacturers argue, increase the productivity of expensive managers and professionals.

The question remains whether they will be easily accepted. not want to learn how to type and will therefore shy away from keyboard machines. This

may well be relevant in the UK, but is far less so in the U.S., where any college graduate will have picked up the skill. Perhaps the biggest attraction of a personal computer for the professional will be its communications capabilities, Linked

to a telephone line, the microcomputer becomes an electronic mailbox, capable of sending and receiving messages from the next office, or around the world. In the end, it may come down

to a question of which is the biggest status symbol—a secretary or a personal computer. There is no doubt that in the very near future, the computer will be cheaper.

Some producers in the West face severe challenges

Japanese make rapid advances

of Xerox and its international subsidiary, Rank Xerox, has been under increasingly severe panies already have many of challenge from manufacturers the components needed. like , Oki, Canon and Ricoh. Fujitsu, Hitachi and Nippon Canon already claims to have captured the biggest share of the U.S. market, where it is ranging from semiconductors to selling 100,000 machines a year.

That pattern has repeated itself in inexpensive computer printers, widely used for perpension equipment.

These companies have an expension of the companies have a companie sonal computers, with Japan advantage over their Western holding an estimated 75 per cent of the American market.

Japanese companies have won a similar share of U.S. sales of high-speed facsimile machines.
These trends have partly "C and C." It aims to be able been encouraged by U.S. office to provide a comprehensive once firmly committed to sell-quantities of information ing only its own equipment, between many different locamarkets under its label copiers tions.

DURING THE past five years, strategies to link their products for consumer electronics, is which consists of more fixed developing integrated systems 10,000 intricate characters. Though Japanese typewriters sight in Western offices. Indeed, their penetration has increased machines — into integrated copiers, small business companies, small fraction of the total manifestation. now mostly for use as self-contained "stand - alone" machines — into integrated office systems. Using their Western customer bases and dominate sales of some types of some types of commonly-used equipment, they aim to develop during this particularly at the lower end of the price scale.

In low-cost copiers, for suppliers of communicating example, the traditional position information processing equipment.

ment.

the components needed.
Fujitsu, Hitachi and Nippon
Electric all have verticallyintegrated product structures

competitors, in that they comcomputers and communications. Nippon Electric has symbol-

equipment manufacturers. Un- range of integrated systems to able or unwilling to produce customers ranging from small themselves all the products companies with just one or two customers ranging from small which they want to sell, they offices to huge organisations have looked to the Japanese to supply them. Even International Business Machines, to be able to channel vast once firmly committed to sell-

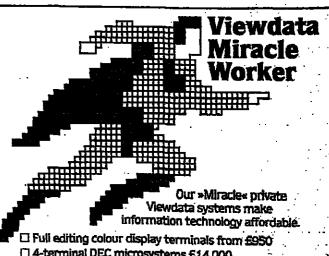
manufactured by Minokia.

Now many Japanese manufacturers are working on target. Matsushita, best known

puters and word processors. small fraction of the total Facsimile has been a popular ber of kanji characters.

means of transmitting written information in Japan, because it avoided the need to print out mechanically the kanji alphabet,

CONTINUED ON NEXT PAGE



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ubiquitous microchip.

Mr Kenneth Baker the Depart-

ment's energetic Minister for

technologically-advanced equip-ment and to encourage British

manufacturers to develop and

supply it.

There is certainly plenty of

scope for more to be done in both areas. Precise information

from the evidence available it appears that the UK lags behind some other industrialised coun-

tries, notably the U.S. and

A study published last year by Industrial Market Research

found that only 3 per cent of business and government estab-

Integrated electrical

Mitsuhishi Electric

machinery. manufacturers

Toshiba

equipment

Communications

Nippon Electric Fujitsu

Oki Electric Home appliances

Matsushita group

Casie Computer

Nippon Univae ... Nippon NCR

Nippon Glivetti

Source: Full Bank Bulletin, 1982.

ably well.
Though Western companies
still have much more experi-

ence in designing word pro-cessors some Japianese manu-facturers believe that the

research needed to overcome the

complexities of their own national language will enable: them to develop still more advanced machines for markets

Japan is also devoting a considerable effort to research and

development on systems which

can recognise patterns and res-pond to spoken instructions. Several companies are already

marketing devices which can

identify a limited range of com-mands spoken by a number of

different people or a wider vocabniary spoken by one individual. The machines are used for tasks like checking

inventories and sorting mail.

The Ministry of International

Trade and Industry hopes to give research in these fields a major boost through its pro-

gramme to develop a Fifth Generation Computer. The 10-year project is intended to result in a prototype machine which can be easily used by under the can be easily used by under the can be easily used and he was a second and the can be can be easily used to the can be easily us

trained operators and will have

limited powers of reasoning.

Collaboration

in the U.S. and Europe.

Sharp Sanyo Electric

Office equipment

Sional tation portant treat.
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iracle

The Ministry, which will conduct the project in close collaboration with a group of

believes that it will open the way for a new generation of machines which can carry out medical consultations, perform automatic language translations and print out dictated text. Though some Western experts doubt whether these goals can be achieved in the 10 years envisaged, many think that Japan will gain much useful

experience in the process. Japanese : industry's . proven success in volume manufactur-ing of keenly-priced office products will be a powerful advantage in its strategy to graduate towards more complex information systems. But it must also overcome some important handicaps if it is to compete effectively on international markets against such giants as IBM Xerox and American Telephone and

THIS YEAR an unsuspecting, found that only one in 10 small and by all accounts largely businesses (defined as those ignorant, British public is being employing less than 200 people) uses a microcomputer. Usage the property of the companion uses a microcomputer. intended to promote awareness was found to be markedly of information technology. The higher in service industries industry Department, which is than among manufacturing

putting up half the money, companies.

hopes the project will bring

central Government itself
home the far-reaching implication is a prime candidate for office tions of the convergence of automation. But equipment computer and communications, like word processors has been technology and the role of the introduced only on a limited The campaign is one of a trial—in Whitehall. Reaching series of initiatives launched by agreement with the main civil agreement with the main civil service unions on the wider use of new office technology Information Technology, has required protracted and to stimulate users to instal difficult negotiations.

The number of government initiatives aimed specifically at stimulating greater public interest in office automation is relatively small. They include the sponsorship of pilot electronic office installations—one about the extent of office auto- tronic office installations—one mation in Britain is scarce but of them in the Cabinet Office —a programme to monitor office system trials and several spearhead projects being carried out to test the application of innovative technology. One of these is a trial of a system which allows direct handwritten input into

lishments used word processors. It is hoped that the spread 9 per cent had computers and 2 of office technology will also 9 per cent had computers and 4
per cent facsimile machines. be accelerated by a number of the more other industry Department sophisticated equipment was programmes. These include setting up technology centres the setting of the computer o be accelerated by a number of Another survey, carried out puter techniques, installing By the Marketing Department microcomputers in schools and of the University of Lancaster, support for the promotion of

WOLD

JAPANESE MANUFACTURERS

z. The five leading manufacturers of office automation equipment

x in Japan account for about 40 per cent of the national production, z so that the degree of concentration is relatively low. b Key: † production; ‡ sales only; * production in preparation

Rapid advances

CONTINUED FROM PREVIOUS PAGE

One of these is that domestic demand in Japan for sophisti-cated office integration is

developing relatively slowly.

Indeed, the pattern of work in
most Japanese offices is very
different from those in the

Because of the complexities of the kanji alphabet, for example, printed or type-written correspondence is rare. Even in big companies, most

internal memoranda are written

out long hand and photo-copied

if more than one copy is needed. But successful integrated

information systems will be

built around software, or programming, which closely

reflects the requirements of users. To try to meet this

users. To try to meet this requirement, many Japanese companies are stepping up

snarply recriment programmers and systems designers and in some cases are setting up their own software centres in the west.

Another hurdle is distribution and maintenance. Though

Japanese manufacturers have been immensely successful at

marketing lower-price products internationally, the distribution channels which they use often

vary from product to product.

sold on a one-off basis, this does

not matter. But customers investing in integrated systems

will want to be able to procure all their needs from a single

Equally, large systems will

require many more highly-skilled engineers to service and

maintain them. That will mean making a substantial investment

in manpower if Japan's reputa-

tion for efficiency and relia-

With stand-alone equipment

sharply

Facsimile Office Personal

equipment computers computers processors

telecommunications indus- action. suppliers to compete, it will encourage the commercial introinnovative products and ser-

Viewdata and Teletext.

Far-reaching

The major beneficiaries of the new policy, which was set in motion last October, are expected to be business usersleast. Not only do their requirements for sophisticated services far exceed those of the ordinary householder, but they are also able to pay more for them.

consortium formed by Cable and Wireless, Barclays Merchant Bank and British Petroleum has started work on an independent communications system, Mercury, which aims to compete with British Telecom in providing premium communications to large companies. Mercury will enter operation in the City of London later this year and spread to the rest of the country by 1984.

Undoubtedly the most far- plans to carry high-speed data and accused supplier companies word processor designed for it reaching measure which the communications and video of taking too complacent a view by Logica, a leading British Government has taken so far, conferencing. The challenge of foreign competition particular to the liberalisation of the stung British Telecom into larly Japan. There were the time the machine became try. It hopes that by relaxing accelerated the modernisation panies with the aggressiveness, had cut their prices sharply British Telecom's traditional of its national network, intro-monopoly and allowing private duced new digital circuits and and high profitability needed to ing and sales volumes were not mail. It also plans to start market. direct satellite communications The in about two years' time.

The Government is putting up half the money for the project, says Guy de Jonquieres

£1m drive to promote office technology

But how much of the future demand for electronic office systems and products will be met by British suppliers? A somewhat gloomy prognosis was offered last August in a study carried out by the Pactel con-sultancy at the request of the for the foreseeable future at National Enterprise Board, part of the British Technology Group.

for information technology products to £105bn between 1980 and 1985. But it warned that Britain, which accounts for six per cent of the total, was supplying only 50 per cent of its own needs. By 1990 the proportion would fall to 35 per cent, producing a trade deficit of £1bn up from £300m × 1980.

the key elements of office automation such as production of bad luck. It was dogged by

launched services like electronic make a real dent on the world achieved.

The difficulties which can beset an attempt to break into the office automation market were underlined late last year by the collapse of Nexos. The company had been set up by the NEB three years before to supply a range of advanced office systems. But it never managed to establish itself, in spite of investments by the NEB totalling £30m.

to technologically sophisticated and often unto fiesh out its product line.
tested equipment in competition The improvement in ICI with powerful giants like IBM and Xerox. One of its more glamorous products was an immensely powerful computer developed by an affiliate of Exxon of the U.S., which Nexos wanted to use as the nerve The report said that British centre of an integrated office. industry was weak in many of But it never took a single order. Nexos was also a victim of May.

As well as voice, Mercury word processors and copiers delays in the production of a It has recently scarcely any British-owned com- available other manufacturers

Outbid by ICL

Last summer the NEB negotiations with Gesteiner, the British copier/ duplicator group, which was interested in acquiring rights to the word processor. Gestetner saw this as a way to move into electronic systems its base in from mechanical technology. But it Some critics have argued that was outbid at the last minute The report forecast a Nexos set its sights too high in by ICL. Britain's biggest doubling of the world market the first place. It was aiming computer manufacturer, which also needed a word processor

The improvement in ICL's fortunes over the past year has been one of the brighter spots in Britain's high-technology industry. After hovering on the brink of financial collapse several months, it has embarked on an energelic recovery programme under the new management installed last

As well as retaining ICL's ments with Mitel of Canada, to in Britain.



tronically.

IBM machines.

But to secure access to the

necessary products quickly and

at the least possible develop-

ment costs ICI, has had to look

to deals with several other com-

panies, mainly overseas. These

included an agreement under

which Fujitsu of Japan will

supply ICL with chip tech-

nology and very big computers

which compete directly with

ICL has also reached agree-

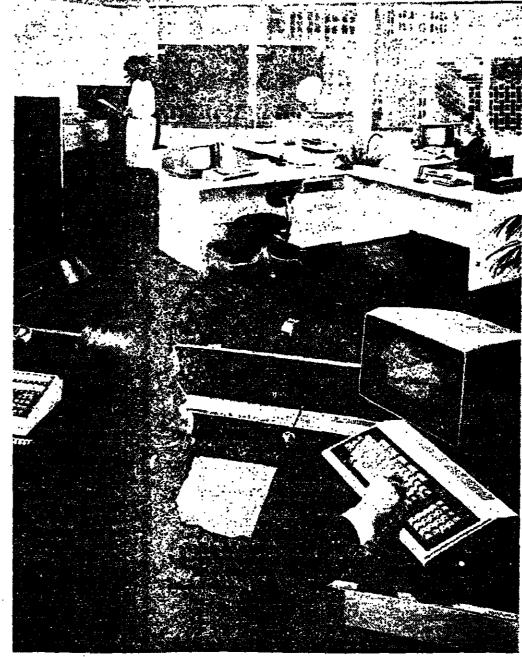
Mr Kenneth Baker, Britain's Minister for Information Technology, is launching a series of initiatives to encourage wider use advanced equipment in commerce and industry

traditional commitment to big market a private branch excomputers Mr Robb Wilmot, its change (PBX); with Three new managing director, aims to expand significantly its role in Rivers of the U.S. to make and sell a powerful professional the office automation market. microcomputer; with Sinclair of His strategy is based on the principle of a fully "netthe UK to develop an inexpenprinciple of a fully "net-worked" product line in which sive desktop workstation and with RAIR, also a British comall equipment, from small deskpany, to produce a personal top terminals to large main-frame computers will be decomputer. signed to communicate elec-

A number of other Britishowned companies have recently taken steps to increase their involvement in the supply of office systems. They include Plessey, which is marketing a system designed bround the PBX which it manufactures under licence from Rolm of the U.S.: the General Electric Company, which is setting up a new office systems division; and Ferranti, which has established joint venture with General Telephone of the U.S. to make telecommunications equipment

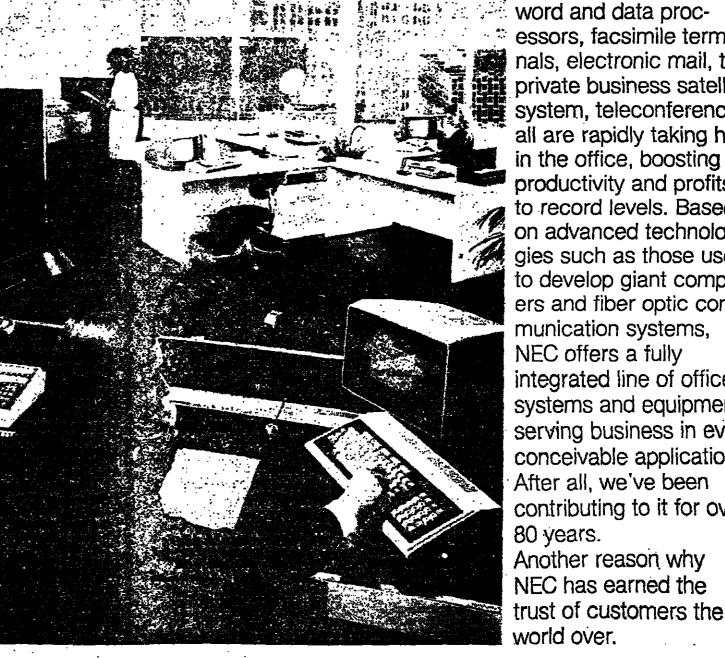
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bility in less expensive equip-ment is to be retained in the fully electronic office of the future. Japanese companies already possess most of the building bricks needed to construct a highly competitive strategy for the integrated office of the future. It should become clear within the next few years how adept they are at designing the greatecture and making the cement which will bind the whole edifice together.

Guy de Jonquieres

Olivetti's three routes to office automation

THE OFFICE of the future is the office of the present. There is not going to be a revolution when the customer suddealy throws everything he's got out of the window and orders afresh-the customer will arrive at the automated office by a process of evolution." This is the view of Sig Franco Agostinucci, manager of Oliretti's word processing and office automation division. In the past six months Olivetti has

begun installing fully automated offices for a number of large Italian concerns, including Fiat -webs of minicomputers, electronic typewriters, word processors, terminals and telecommunications equipment. But despite its novelty the automated office is inevitably just the culmination of past developments.

Olivetti is the biggest maker

of office and data processing equipment in Europe and the sixth biggest in the world. Though it is one of the leading private sector companies in Italy, only about 35 per cent of its group turnover (which in 1981 reached L2.887bn—\$2.2bn) arises in Italy, and nearly half its 53.000 employees work out-

Traditionally, Olivetti has been known for its typewriters and other office equipment, though it has long been involved in data processing and until the early 1960s was making large computers. But in the past few years two processes have been at work: first, sales of Olivetti's data processing equipment-which include word processors, personal minicomouters, accounting and business telecommunications systems, telecommunications equipment and terminals—have expanded so that in 1980 they accounted for well over half group turnover.

The first

Secondly, Olivetti was the irst company in the world to introduce the electronic type-writer, which in 1980 accounted for 8 per cent of group sales. The result is that for Olivetti the gap between office and data processing equipment is becoming more blurred, and another consequence is that the traditional mechanical or electronechanical Olivetti typewriters will gradually go out of production, as they already have in some plants.

Though in 1980 they still accounted for a robust 24 per cent of group sales the fact that they have about ten times as parts as machines makes them far cheaper to manufacture in terms of mannower.

Because of its strength in

Information Word processing systems 5.3 Personal minicomputer 3.5 Accounting and business

Grand total100.0

GROUP PRODUCTS

systems Telecommunications equipment .. Terminal and data entry Total Electronic typewriters ... 8.3

products voewriters Office furniture

modern office automation than other European office equipment makers like Triumph Adler and Olympia. Instead, its rivals are other data processing equip-ment makers (IBM with its strong presence in office products as well is an obvious one) and lately the big telecommunications companies, as well.

For the dividing lines between machines for office, data processing and telecommunications use are becoming blurred and the machines them-selves can increasingly be used for more than one function. Since many of the components are the same, the real competi-tion between the office automation companies is in such things devising the most convenient links (or interfaces) between the different components, and making the machines easy and pleasant to use. At least in Italy, Olivetti

claims to be able to approach office automation from all three poles-from its bases in office products, data processing, as well as telecommunications. It's difficult to sell the global

system approach," says Sig Agostinucci. "It's better to Agostinucci. "It's better to build on what the customer already has. The large customer who wants to buy new equip-ment will know all about office automation and what the office of the future is all about." In most world markets

Olivetti's strengths are Europe, Latin America, Australia and so on — Olivetti starts from the office equipment base. It envisages building up systems commencing with the electronic typewriter, ascending memory electronic through typewriters to display word processors, and on via communications systems to electronic storage and clusters

systems. Olivetti is in a far ultimately be a minicomputer teletext will allow machines like

A secretary sitting at her electronic typrewriter can ask the computer what electronic modern office instant mail there is for her that day, munications. and the computer can then send her the messages in the order she wants them. She can despatch a telex message to another company ordering, say, spare parts, going via the voice private business exchange (PBX) and minicomputer to the telex machines, and the computer will simultaneously store her request and send a copy of it to the company purchasing depart-

The data processing approach applies particularly to organisations like banks which already have Olivetti business systems it is rather the reverse of the office equipment approach.

The starting point is more likely to be a computer and related terminals, to which are now to be appended word processors and electronic type-

writers, and so on. Olivetti is strong in bank automation—systems that connect the counter (automatic teller machines) with the back office functions. As well as its home base of Ital, where about three-quarters of all automated banks have Olivetti terminals. the Italian company has a strong presence in Australia, in the Japanese rural bank sector (recently) in Denmark and else-

Strong sales

Olivetti has not traditionally been very strong in telecommunications, which accounted for only 6 per cent of group sales in 1980. It makes teleprinters and message switching equipment, for both of which has strong sales in Italy and in certain other countries, like Austria and some states in the Middle East. It also sells voice private business exchanges (PBX) under licence from Northern Telecom and is to start manufacturing them under

Only in Italy can it start from the telecommunications base: in other countries it has come up against the fact that most states Olivetti is making use of tend to favour domestic manufacturers for telecommunication. Olivetti is making use of tend to favour domestic manufacturers for telecommunication. tions equipment and PT connections, while even in Ital the future structure of the telecommunications industry and the systems have yet to be Nevertheless. Olivetti is de-

stronger position to compete in (magnetic storage), with a voice word processers and electronic

machines in other places will out going through the mediof a telex — thus giving the

For small companies ploying 100 people or Olivetti's approach is most the to be via the business system. may already have installed; computer for handling payres and other administrative mat ters. This is one of Chivetiff stronger fields, in view of its absence until recently from the large computer market (it now sells such machines under licence). It can build onto the base of small business computer by installing multiple keyboard machines for data entry and

access mail, and so on. The story of Olivetti's reable, overstaffed and heavily in debted company in the second half of the 1970s to the leaner, profitable and almost negligible indebted company of today is becoming well known as a textbook for the recovery of the large Italian company.

It was due to the arrival of Sig Carlo de Benedetti as chief executive in 1978, the changes he pushed through and the coincidence of the fact that the company was then ready to launch its electronic typewriter, whose sales have grown so fast (in the first half of 1981 they amounted to 20 per cent of the turnover of the more electronically oriented parent company, Ing, C. Olivetti).

The parent company in 1981 made profits of Lire 87.8bn on turnover of lire 1,362bn, a profit increase of 75 per cent:

The other aspect of its growth has been a steady series of acquisitions both in the U.S. and Europe. In 1981, Olivetti took a controlling stake in Hermes, the Swiss office equipment maker, and in West German subsidiary, Data Terminal Systems, which contributed to group sales in the second half of last year. It also took a 23 per cent stake in Docutel, the U.S. manufacturer of automatic teller machines for banks, and in Syntrex, a U.S.

word processing machine maker. market in general has been disappointing for Olivetti in the

Another aim of this and other acquisitions of small companies is to obtain rapid access to know-how which it would takeveloping a teletext machine, for a year or two to acquire on its the new advanced system the own. The policy is considered lines for which are being in- essential to maintain a technostalled in several European logical lead in many fields in a

James Buxton

Industry is now showing willingness to accept change

France strives to catch up

rated much paper in France over the past few years as the notion of the paperless, all-electronic office. But according to most market studies, the country remains slightly behind most of its Western partners in the application of these systems, firmly wedded to the red tape that has given French bureaucracy such a fearsome reputation.

This tardiness in accepting change has, until now, tended to count against French industry. In virtually all the main sectors of this extremely fragmented market, France is reckoned to run a balance of payments deficit. Hence the concern of successive French governments to galvanise industry into action — an attitude which began to produce results in the latter days of the last administration.

The outstanding example of this change was the move by Saint Gobain to link with both Cii Honeywell Bull, the Franco-American computer group, and Olivetti, the Italian typewriter company. Saint Gobain's idea was to form a broadly-based office equipment supplier which would draw strength both from Olivetti's know-how in word processing production and from Cit's computer-based office peripherals systems.

Matra, the missiles and high technology group, has similarly tried to build on its competence in using micro-circuitry to move into terminal equipment manufacturing.

Yet both of these examples fall outside the mainstream of

the French strategy. In three other big companies—CIT-Alcatel, Thomson-CSF and Jeumont Schneider—this is based on a controlled expansion from their base in telephone switching systems.

In this field, at least, French industry has a leading position in its home market and is reckoned to have the technological strength to carve out
a healthy share of world sales.

The basic concept of all
these companies is therefore to
add a range of compatible

For examples, in the copier

for every department, penetrated the market to any
great depth. It is reckoned
that there are only about
100,000 installed machines in
the country. Similarly, telecopiers, generating a turnover
of around FFr 33m in 1980, are peripherals around their private field, there is no significant still not widely used. The esti-

ing concern, in the U.S., expanding its international base through the acquisition of Roneo in the UK. The company believes the latter deal is particularly important in giving it the company of the company is the company in the com giving it the commercial net-work which is a highly significant, but often overlooked, part of the office equipment industry, particularly on the servicing side.

20% of market

Thomson's development is particularly based on integrated and interlinked information systems, spreading out from its switching systems into a range of mini-computers and office terminals. A terminal has the main success of domestic been developed and already sold overseas, through a in the telex market, where the 35,000 order to GTE of the U.S., country runs a balance of payand it is also marketing a ments surplus, reckoned to facsimile machine. In France amount to about FFr 100m in it reckons to have about 20 per 1980. The strength of the cent of the market in the mini- telex industry is based mainly

strong as CIT in the French group, market, through the takeover of SECIE in the word processing and telecopier field.

Despite these developments, penetrated the market to any

telephone exchange systems. French manufacturer among mated installations in 1980

FEW SUBJECTS have gene- Once the company has won an the top six according to a totalled about 6,000 although rated much paper in France order for the switching apparation recent study. The plain paper it is reckoned this could grow

is heavily dominated by foreign companies. Out of a total type-writing market of 2m units in 1980, worth about FFr 1.6bn about 64 per cent were reckoned to be electric. At the same time, the electronic revo-lution is still only beginning, with 15,000 electronic machines in 1980, and 19,000 word pro-cessors—of which Olivetti, IBM and Cii-Honeywell Bull took the lion's share. The new typewriting systems

are however, reaching takeover point in the French market. According to recent studies, the installed number of word processors should quadruple over the next five years.

computer field.
Similarly, Jeumont Schneider, a subsidiary of the Empain information systems. Sagem is Schneider group, has branched out from its private exchange cent of the world telex market, technology, where it is followed by Sintra, a subsirectioned to be virtually as sidiary of the CIT-Alcatel strong as CIT in the French

Despite French industry's relatively strong position in this sector, the telex has not

tus, it is argued, it has the copier market reckoned to be to some 21,000 within two base on which to sell the rest worth a total of about years. Some experts believe of its range, from screens, to FFr 1.7bn (\$694m) in 1980, was the telecopier market will memories, to copiers.

Not all these companies have the full range of peripheral Gesteiner, 3M, IBM, Nashua regarded as a cheap and easy materials, though one of the and Canon. One of the newer objectives is to be able to market different equipment making great strides in the market is likely to decide in

objectives is to be able to marry different equipment through the switching system.

CIT-Alcatel has probably gone the furthest with this process, developing a range of information screens, keyboards, telecopiers, and facsimile machines to go with its private exchanges. It has moved into the so-called "back office" activities through the takeover of Friden, the automated mailing concern, in the U.S., ex.

entrants, Minolta of Japan, is making great strides in the market is likely to develop in the field of electronic filing and information storage. French office manufacturers are beginning to develop systems for dealing with this problem, which is reckoned to take up about 9 per cent of the working day of the average French office worker, but again it is a field that is a companies. At present fewer than a million of France's 6m. of almost 400,000 copiers of all types.

In a similar way, the type-writer market, evolving with the change to electronic machines and word processors, is heavily dominated by foreign companies. Out of a total typemicrofilm or magnetic storage facilities. But the develop-ment of the market is expected to step up sales from about FFr 350m in 1980 to FFr 800m

A question

The overall value of the French market for the various types of office automation equipment remains a question considerable argument between specialists estimates vary between FFr 3.4bm in 1984 and FFr 8.5bm in 1985. What they are all agreed on is that it will remain one of the least developed markets in Europe despite a boom in the text pre-paration segment. France is expected to account for only 17 per cent of European sales, against 19.5 per cent in the UK and 25 per cent in West Germany in three years' time

Against this background, the new Socialist Government is expected to continue with the selective research aid programme inherited from the previous administration. But it is not yet clear exactly where the money will go. Virtually all the leading companies in this sector — including Olivetti-through its connection with Saint Gobain - are linked with the nationalised groups in one way of another. Hence the development of France's "bureautique" industry will 10 some extent depend on decisions taken about the organi-

sation of the State sector. Terry Dodsworth



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A Westinghouse open office word processing workstation. The total UK office furniture market is

Manufacturers of specialised furniture systems for the electronic office reach a turning point

Workstations of the future

WHILE the major focus of the office of the electronic age office of the 1980s continues to still a good way off. be the advances in technology, many office furniture manufacthe Cinderella items of the office, with managers placing furniture on a low expenditure-

There are fresh indications, however, that suppliers—par-ticularly in the £37m systems furniture market—are uniting to create greater market awareness of furniture for the electronic work-station.

The National Business Equipment Survey says that united efforts by furniture suppliers in the past year suggest that a turning point has been reached, with individual companies combining muscle to make joint (as well as individual)

include events "Designers' Saturday" in Lon"The most constraining indon, the setting up of the Confluence is the building itself tract Design Association and the coming "Workspace 82." G. A. Harvey, for example, is about to spend £250,000 on pro-

moting its System One range, to be officially launched in

Mr John Sidwell, Harvey's managing director, says the company is "moving into a very professional area and our aim is to create a strong identity for Harvey end-users and archi-

Steelcase Strafor-the largest furniture manufacturer in the U.S., although a relative new-comer to the UK market—is doubling its p.r. investment and adopting a broad-based approach in terms of targets

this year. The company will soon be launching several additions to its Series 9000 system, including a new European-designed and developed work-surface, as well as a wide range of elecstations, to be marketed as

Major efforts

A number of British manufacturers are meanwhile making determined efforts to introduce new office systems specifically designed to meet the demands of the electronic office—for example, Lucas Furniture Systems of London with its recently launched Programme

Two range.

Jean Davis of the National Business Equipment Survey says that systems suppliers (the larger, as well as the smaller) are also expanding the focus of their attention to include nedium-sized contracts of 20 to

25 work-stations. The increasing maturity and growing competition of the systems market should make such a development both expected and welcome.

Herman Miller, which leads the field with a 32 per cent share of the UK market, is among those companies which may even be extending the systems furniture concept outside the office environment—

side the office environment the company has introduced its and contractors profits and "Action Factory" plan for light assembly engineering situations mainly eliminated for system: £40,000 situations, mainly aiming for computer manufacturing groups. Wang, for example, has installed around 150 Action

Factory work-stations in their Southern Ireland base; and IBM are currently testing an Action Factory work-station in a variety of manufacturing

Despite all the advances in information technology the Britain is sadly lacking in overdesign-function require-

Mr Roger Henderson, of Space Planning Services, suggests that, in reality, the truly automated

Michael Dixon highlights the complexities of teaching new skills in the computerised office Important aspects of staff training

OF THE VARIOUS human by the advance of technology, perhaps the least noticed is our attitude to learning and know-

there exists a minority of sages -priests, scholars and then scientists—possessing deep theo-retical knowledge covering all important aspects of life. Our Introducing attitude has been that if we could not ourselves learn the sages' theories well enough to apply them directly, we could always go to the learned source and be told what and what not

Since the 1960s at least, the sages have been seen increas-ingly to have feet of clay. Few managers believe any longer that there are theories of management which can be learned and applied systematically and effectively. Teachers have ruefully discovered that there is no educational theory which can ensure that uninterested children learn mathematics.

The undermining of the past two decades looks likely to be turned into large-scale demolition by the development of the so-called electronic office and its repercussions on the majority of working lives. While there

habits liable to be rudely shaken theory to tell us how to use instructions are unimportant. them sensibly

How best to introduce and decided only by the particular For centuries most people organisation concerned. Since have been led to believe that that is true of the equipment available now, it cannot be less true of the unforeseeable advances which will be on the

Introducing an electronic system into an office is a bit like sending everyone working there to a different company where they will need to learn how to behave appropriately in new conditions and with changed human

In the absence of any theoretical short cut to learn-ing how to do that, the only course is to grow accustomed to the strange, multi-skilled but moronic newcomer and find out how to get on with it by

Managers and staff have to evolve their system of working as they go along, which means continuously observing what is happening, reviewing it criticand changing their behaviour accordingly. What will make the difference between success and failure is still intelligence, but practical intelligence rather than the

A bit of forethought however liable to error, can save a lot apply these theories can be of anguish especially if it enables most of the staff one group's training manager savings permitted by the responds to the eyesight objectivation to be made gradually by tion by asking if the person

> Presentations to and dis- about the effects of watching cussions with staff intended to give them a broad apprecaition

natural wastage.



of what the change implies are something which cannot be started too soon, for the same deep fears among employees tend to be raised again and

television.

again regardless of how often they are refuted. One of the most common objections is that visual display screens injure people's eyes if not their entire metabolism. There is apparently no evidence that this is so generally. But since already defective sight may be made worse by watch-

their entire metabolism but there is no evidence that this is so important about the changes the new system implies in who does what. Ostensibly the newcomer has a typewriter keyboard plus various extra keys which activate whole complex

functions. What these produce

can be far more directly useful

to a manager than to his or her

objections is that visual

injure people's eyes, if not

display screens could

secretary or assistant. Experience suggests that the effect is to change people's jobs, requiring executives to operate the system first hand fairly frequently—which is why pin-striped gents are increasingly While there are sound intellectual kind, ing screens, staff likely to be striped gents are increasingly theories to guide the making. That is not to say, of course, in front of them for long seen tapping away for an hour improvement of word processing that the intellectual skills of periods should be given eye or so daily at the various

keyboard skills.

intervals thereafter. Even "typing pool" staff formerly engaged almost enspend only 35 to 40 per cent of the time watching screens, and tirely in secretarial work tend analytical tasks on their beginner. manager's behalf. They need, perhaps, to know how to write a programme to produce specific making it is similarly worried kinds of result, which in turn increases the importance among Forethought is at least as office workers of the intellectual skill of deciding what information needs to and can be called One of the most common

> younger staff to learn the new tricks more readily than their elders. Left just to happen, the result can be confusion and ill feeling in offices whose staff pecking orders formerly gave pride of place to the competence gained by are and experience. If this possibility is anticipated and aired, the dangers can be reduced.

For staff who will mainly be operating the system, there are numerous introductory courses available on the market. They usually last about three days, and can vary in price from around £250 to £500. But after the course, it is rare for anyone to become proficient in using new possibilities and depos the new system without practising on it for six months or so, especially if it includes complexities such as shared logic. | how led Learning by doing in this way implies.

systems and the like, there is no planning or of memorising tests beforehand and at regular schools which train people in 15, of course, more effective if conducted under me guidance of At the same time staff someone else nimale more profirst introduced, the problem is to become more involved in that everyone in the effect is a

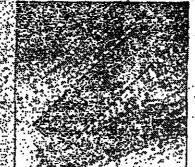
> The best way of ever-coming the difficult scens to be to make techniques most quickly role of supporting count offers to their colleagues who are relatively struguling.

There is absolutely no subseqout of the electronic entrails. A further tendency which it intelligent practice and, orgais wise to consider early is for again, the prospects of absorb productive cooper tien among erapleyees are mercus of by proporing the ground for the The advance.

Where foretiment is at the greatest premium, however, in surely at the level of govern-ment. The development of the electronic office has execution employing organisations where

if makes its direct greact. vance will reduce the good for and secretarial jobs in could permit the creation of new kinds But inventive explanation fotore brought up in the different after rades towards learning and knowledge which the advance

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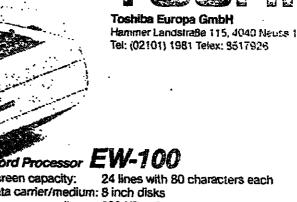
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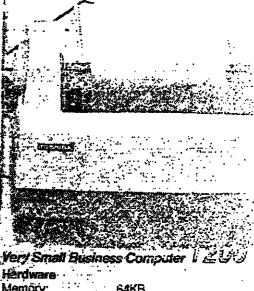


Data camer/medium: 8 inch disks

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1/10, 1/12 inch spacing or

variable character spacing



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Data carrier/medium: 514 inch disks Storage capacity: Printing rate: Characters per line: 136

280 KB × 2 125 characters per second

Software Toshiba Business Basic System, CP/M- 2.2 (optional)

GP/Mis a registered trademark of Digital Research, inc.

Screen capacity: Storage capacity:

Situations. average office environment in

While suppliers vie with each other to sell their concept of the electronic office, some leading office planners question how ready the European market is for these advanced products.

"The office of the future might be a realisable dream toturers are bemoaning the fact day for companies setting up an that their products are too often administrative unit from scratch, with few budget restrictions and the courage to face the daunting task of establishing new systems which take full advantage of available technology.
"In effect, this is an unlikely

set of circumstances - and the opportunity to create a purposedesigned administrative centre truly from scratch is a rare one! " he adds. Realistically, most office units

still " grow like Topsies " rather than in a planned way --changes in company organisation can bring about quite dramatic re-groupings and changes in staff numbers, but often old working methods continue.

and its physical arrangements which remain static over long periods until a major re-organisation is embarked on," comments Mr Henderson.

Planning -

Once this decision is reached companies are commonly faced with the situation of introducing automated systems and information technology into existing buildings. Overcoming the inertia or negative reactions to change, that we all experience as individuals and as a work force, is a problem which management must overcome Equally, the environmental and technical problems need just as much thought and consideration an aspect which is often overlooked by management as well as equipment suppliers. Given the opportunity to plug your personal terminal, with its TV screen, into an automation network, "cable management" has now become an important feature of all office re-organisa-

tion plans. Various solutions for coping with traiking cables are available. Most of them have merit, but there is no one universally satisfactory system.

By way of example, SPS have made a comparison between using a screen based furniture system to route services wiring and a flexible flush floor trunk-In order to make a fair com-

parison it is assumed that an office building of some 5,750 sq ft is in the process of being fitted out, and that, at present, there are no services laid on.

In the first system, services would be provided at the perimeter and at central columns, and then the floor would need to be carpeted. In the second, the floor screed

would need to be dug up, trunking laid, then a carpet fitted with special cut-out traps to the services trunking. The costs of the two alterna-

Perimeter and column trunking: £20,000.

However, as it would be necessary to provide a sophisticated screenbased furniture system in the second instance, the comparative costs of refurnishing for 45 staff would be, approximately:

furniture: Conventional £45,000-£50,000. Screen-based furniture system: £70,000-£90,000. In summary, therefore, the total cost of the first alterna-

tive would be between £85,000-£90,000 where a large part of the investment is in the building. The total cost of the second alternative would be between £90,000-£110,000 where the majority of the investment is in the furniture.

Michael Wiltshire

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Survey of user-attitudes among smaller companies

Many potential buyers confused by manufacturers' jargon

ALTHOUGH MANY manuestablishment sectors have liarity with such phrases, the large companies see redund-facturers are strongly promotes serious doubts related to the following response levels were ancy as a major problem. How-ing the concept of the fully-cost/benefit ratio. recorded: ing the concept of the fully-integrated electronic office, it appears from a new survey that many smaller to medium-sized companies in the UK still have serious doubts about the desirability and viability of

such systems. Furthermore, a large number of companies perceive individual items, such as electronic typewriters, word-processors and mini-micro computers, as word-processors "an electronic office." says the National Business Equipment Survey, in a review of the attitudes among users and potential users.

The manufacturers' concept of the electronic office is not the same as the perception currently held by end-users, according to Mr Gautam Barua. of NBES. The market-place is all too often confused by manufactures' jargon and technology Sixty-two per cent of small

establishments employing less than 50 people have expressed doubts as to the value of full utilisation of an electronic office system where machines can the attitudes of end-users to-communicate with each other. wards the electronic office and Another major constraint for these companies is the capital jargon commonly associated cost related to new methods, as with the installation of an office well as other hidden costs. In other words, the majority of small

The survey also highlights expenditure priorities in terms of product groups. In the context of the electronic office, endusers are likely to concentrate major expenditure on the fol-lowing items:

Wordprocessors 12 Electronic typewriters 9 VDU/Printer terminal 10 Telecommunications, including telex Microfilm

Meanwhile. 34 per cent of respondents had no plans to in-troduce additional items of tech-

nology. With the exception of the larger office establishments, the concept of the fully-integrated office system has yet to be absorbed and comprehended by the marketplace and has there-fore failed to catch the imagination of the vast majority so far.

This has been confirmed by their familiarity with marketing system. When the National Business Equipment

Data-base management Integrated network 45 Local area network 52 Distributed processing 38 System network architecture 18

It is interesting to note, notwithstanding the vast amount of educational campaigning which has gone into promoting "local area xetwork" and "Ethernet," that the awareness of Ethernet was only 22%.

Manufacturers themselves are guilty of confusing the market-place/potential users with jargon and with technology issues. A large number of endusers, both in large and small companies, need assistance from the manufacturers in terms of practical help so that they can appreciate the application of office automation. Large establishments, such as

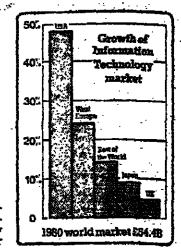
banks, insurance comanies and local authorities, express the view that future problems will be related to the integration of hardware and software for multiple vendors and suppliers. The overall impression from

shared by medium/smaller sized companies employing under 100 people who think that new technology will increase productivity and profit-ability and thereby avoid re-dundancies, and in the longrun will even help to invest

more money in the business and provide more opportuni-ties for the workforce and in than 100% because of multiple some cases higher employment. Another area highlighted in the survey is that of personnel relations between staff and management: the general view in large establishments employing around 500 people is that staff relations during the transition to the electronic

office are a key issue. The problem of harmonising people to "make it' work" is an important factor and people should be made aware of the potentialities of the technology so that they may appreciate that they themselves will be capable of capitalising from

Michael Wiltshire



Industry has estimated that more than 50 per cent of British companies are still not using microelectronics or information technology in any way—and most people outside the industry still have little idea what IT is

For Information Tech-nology Year, the nationwide awareness campaign. Mr Kenneth Baker, the Minister for Information Technology, has committed up to £600,000 towards funding the year.

Meanwhile, the Government has set aside £80m over the next four years to help British industry to research and develop innovative preducts and processes needed to increase the UK share of the market.

• Details of the campaign— and the prospects for British equipment suppliers—highlighted on Page XV.

How Mullard used technology at the heart of its own business to cut down waste

Reducing the paperwork

MULLARD, the UK electronics subsidiary of Philips, and a supplier to many companies moving along the route to office automation has itself taken substantial strides to reduce the amount of paper used to run its business.

"We could not afford to run our business the old way any more. We would not be able to afford to employ all the people who would be needed to handle the paper and we would not know what is going on in the company," notes Mr Ivor Cohen, Mullard's managing director.

The problem is simply that of taking orders, informing production and despatch and so on, through to invoicing. The comparison is not, as might be thought, with some pre-computer—used inside Mullard age where armies of clerks are wering customer telephon processing orders manually, but inquiries—and half with custowith a computerised system mers. By the end of the year used until a few years ago. this is expected to rise to 200.

used until a few years ago.

The range of Mullard's products and customers shows why it has to rely so much on the technology which is at the heart of its own level, and another 20 terminals connected another 20 terminals connected to rise to 200.

Internally Mullard has 150, terminals which give direct, another 20 terminals connected to rise to 200. of its own business. The com-pany has 19,000 different pro-ducts with 30,000 sub-products purchased by 3,000 customers.

When the system was first computerised and orders were processed in batches, it still involved considerable generation and movement of paper. Mullard has now developed its on-line information processing to a level where paper barely appears. The major filing is only of the customers' original order once the information from it has been directly typed into the

mainframe computer by a clerk. The only other pieces of paper to emerge from the system are an advice note for the customer and the invoice. All internal information—such as for production, delivery, accounts and so on-appears on video display

terminals. The most recent step has been to provide major customers with simple access to Mullard's own ence gained with Xibus was valuable in starting the company down this difficult road.

Elama Well's maintrange computer to quiz it about the level, nature and state of their own orders. More dramatically, by the end of the year they will be dramatically, by the end of the year they will be able to inquire about lead times, supply

order parts, from a terminal at their own premises linked to Mullard's computers via the telephone.

Customers equipped viewdata terminals will be able to dial Muliard's new private viewdata system which will in turn, link them to its IBM mainframe after about a 20-second wait. Each customer will have a nine-digit code number as well as their own changeable private security code. The advantage of the viewdata terminal is that it is a universal system and it enables someone unfamiliar with computers to easily find

the data they want by offering a simple menu of choices. At present there are about 32 viewdata terminals on the system of which half are being

to a Philips minicomputer, which is used mainly for work-processing. Another minicomputer with 12 terminals is used for modelling and statistics. The minicomputers can also be used for data entry and local processing and can be linked

to the mainframe computer. About half of the staff at the Mullard House headquarters in London have terminals, and by the end of the year 60 per cent of the secretaries will be linked to the wordprocessing system.

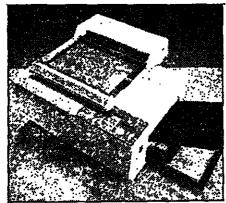
Managers now study management reports on a terminal which used to run to 30 miles a month of paper notes before they were put on a real time computer system. Service engineers and salesmen are increasingly using portable terminals to operate the computer from home or hotel. The rapid growth of information systems and the ability to communicate with them by

telephone has left Mr Cohen passing a questioning eye over the substantial rates on the

Jason Crisp

Mild P





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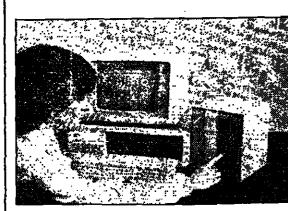
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processing and personal computing facilities

The Xionic system is being used at BP Oil by managers at several levels. Secretaries can also use it to store files, send electronic mail, provide word

Local area networks deal with Xionics

BP plays the guinea pig

WHEN Mr Mike Bevan, chair-man of Xionics, wanted to develop an office automation system, based on the concept of local area networks, he managed to pursyade British Petroleum to act as a guinea pig and help guide the design. Since then, the Xibus system

has been chosen to automate the Cabinet Office in Whitehall during this year of Information Technology and has secured business from other large organisations such as ICI, Scottish Gas, Allied Breweries and Littlewoods.

The principle of office auto-mation, using a local area network, is simple. All the electronic office equipment — from word processors to telex machines—are connected with a loop of cable which is wired around the building.

It's akin to the electricity main in every home into which we have becomed an entire or an en

plug household appliances; instead of carrying power, the loop carries information from one piece of office equipment

to another.

Xionics has developed an "open system" which means that a company can connect office equipment belonging to a number of different manu-facturers. This means that companies are not tied to one maker's equipment once the local area network is installed.

BP Oil agreed to acquire the Xibus system from Xionics on preferential buying terms, and to make an advance stage payment in order to assist the funding of the development.

In addition, the company seconded two of its engineers to belp with the design of the system which was installed by November, 1980. Since then, it has been used for the creation, storage, retrieval, indexing, cross reference, printing and communication of words and data needed to operate a large

business.

The BP oil installation at
Hemel Hempstead is made up
of 18 work-stations which can all communicate together but are monitored and controlled by the Xibus master node, which is simply a computer to keep track of work. Some manufacturers of local

area networks—which allow various types of office equipment to be connected together do not use a computer but Xionics feel that

large systems need a measure of control which can only be obtained with a computer. The BP system is used by managers at several levels and by secretaries to store personal files, send electronic mail and messages, provide

word processing, personal computing facilities and maintain specialised logs and calendars. According to BP, the Xionics system offers significant improvements over less

advanced techniques giving quick access to shared pools of information. BP had three aims in mind

when it became involved with Xionics. It wanted to learn how to devise systems and now to devise systems and programmes on microprocessors; to find out more about open systems which allow different manufacturers equipment to be connected together and to explore how aspects of the automated office could be used within its office could be used within its walls.

Mr E. C. Harris, BP Oil's director of finance and plan-

ning admitted that at the time they decided to implement the electronic office there was "little choice at the time" and felt that co-operating at the development stage of the Xionics system was better than waiting for a suitable system to emerge. In general, British Petroleum is a company which is aware of the need to investigate new technology as it arises. It

considers information tech-nology to be so important that it has set up a special department to plan and implement the company's long-term IT strategy.

Mr Harris, however, did point

out that office automation is a very complex subject and "the best way ahead for BP Oil will take time to emerge." He commented at the inauguration of the system at its computing centre in Hemel

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The LMP word processor fr OTL gained the RLTA (Recogni of Information Technology Achievement) award as word	tion (C)			

The LM.P. word processor OTL gained the RLTA (Recogn of Information Technology Achievement) award as word processing system of the year. Come and see why on Stand 50 at the International Word Processing Exhibition, Wembley Conference Centre, 25th to 28th May 1982. No other word processor can

offer such benefits: comprehensive but very easy to use text editing facilities, safe and high capacity storage, instantaneous access, visual integrity, a complete awareness of the needs of the individual user and of the organisation, and very cost effective.



Office Technology An Information Technology Company

Alan Cane reports on the seemingly bewildering variety of systems now on the market

Wide choice of electronic mail systems

SUDDENLY electronic mail is grabbing the headlines. British it is expected the public will ments for the typewriter—make electronics systems which are their appearance matter. Leyland Systems is extolling the accept the electronic office. virtues of its Comet service. British Telecom, with unlikely sprightliness, launched its own financial, technical and human,

Switz Land Backers

The structure of the state of t

123 at thek

Govern May

all, electronic mail in the form can all be connected easily of the public telex system has

It is unlikely that any company would have the resources,

proprietary systems.

Why all the excitement? After all, electronic mail in the form can all be constructed in such a form that it although electronic mail

been working effectively for Progress is likely to be ally—the facsimile transmission many years. The answer has a gradual and slow. First, word of documents, for example—

The newly-formed GEC Information Systems aims

to meet needs of individual customers

their appearance, mature as designed to transfer short products and become accepted. messages and electronic systems, Other systems follow.

sprightliness, istuncted its own Telecom Gold operation only last month. And a score of manufacturers and suppliers including Argeon, Case, Datapoint, Hewlett-Packard, MDS existed, the necessary equipment is certainly neither avail-Electronic message and mail ordinary mail. Even if such a company tronic office—and the wide- send short messages to each Although electronic mail could be defined as any information transmitted electronic- format.

of useful facilities built on top of its basic store and forward Store and forward is the heart message services and means that just as you do not have to be physically at home for your postman to deliver a letter, so you do not have to be physically at your desk to receive an electronic message. The message is held securely in computer storage until you are ready to

British Telecom, for example, offers a facility on its Prestel service which enables users to

other. On the other hand, Tele-com Gold is capable of handling

lengthy messages and has a host

Arriving at the office in the morning you turn your terminal on and log-on to your local system—this is commonplace for many executives using com-puter-based accounting or pre-dictive systems, in any case. The screen will then indicate the state of your mail box, and your can if you wish inspect you can, if you wish, inspect your mail—either on the screen or using a hard copy printer. It will also organise your diary. There are estimates that some 0.000 executives use electronic mail systems in the U.S. But as the office system consultancy Urwick Nexos put it in a review of these systems: "Who wants to replace a diary by a £1,000 (erminal and have to learn to type in the process? What is wrong with a memo? About 90 per cent of letters are

delivered next day and that is

fast enough for most require-

ments. If you want to send an

urgent telex you can always go to the telex room with a hand-

have been said of the telephone sage systems on the market. 100 years ago, pointing out that Comet was written by the Comthe chief criticisms of that system today are that telephone designed as a challenge to interruptions are disruptive and it can be frustrating to fail to get through to the person you Equipment minicomputers, wish to speak with.

And that, Urwick says, is where electronic mail can help: The sender is not annoyed when he does not establish direct contact as this is not required. The system will deliver the message to its des-tination as and when required by the recipient."

In favour

Other arguments in favour of electronic mail:

 Several functions such as text editing, filing device, copier and so on can be combined in a single desk-top device.

 Any message system can be accessed anywhere in the world, given a telephone and a portable terminal.

• These systems can be cheap to operate especially if terminals are already in use for other applications. Against:

Systems such as IBM's ADS and Wang's Digital Voice Exchange are a genuine alternative.

A single screen cannot dis-play all the documents that may need to be examined during preparation of a mes-sage. The user could print out all the relevant material. but that would defeat the purpose of the system.

Existing computer systems may not be able to cope with electronic mail systems. Neither may existing office

There is already a bewilder- people scarce. Now hardware is

Urwick argues the same could ing variety of electronic mesputer Corporation of America and is marketed in the UK by British Leyland Systems. It was designed to run on Digital

Now it is also available on IBM mainframes. According to BLS, a small Comet configuration based on a DEC PDP-11/34 minicomputer could support up to 600 subscribers. Comet running on a large IBM mainframe can support up to 999 users. Messages for users are sorted by the computer and stored in named "mailboxes" in the computer's memory. When a user logs on, the system checks the correct mailbox and gives the user details of any new messages. The user can, of course, reply to any of the messages or write new letters at

What makes Comet in the UK and British Telecom's Gold Service unusual is that they can be supplied on a bureau basis. Telecom has operated the National Data Processing Service since 1967. It operates the Prestel viewdata service which is really a country wide bureau operation offering information instead of data processing. Now there is Telecom Gold, which is not owned by BT but by Dialcom, a small U.S. computer bureau which has specialised in the electronic office and in electronic mail in particular. and whose system has a high

the terminal.

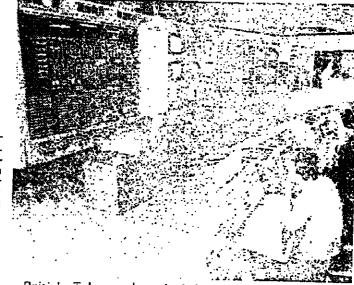
reliability.

Apart from mail, Gold offers express delivery, post dated mail, multiple message facilities and diary scheduling, 'phone messages, data filing, word and text processing.

hardware was expensive and

What's the greatest leap forward in typewiters

since they wert elected



British Telecom lannehal its own Telecom Gold electronic mail operation has month. Above: a control room at the Telecon Tower

relatively cheap but people are DISOSS, and Telemail from GTE Furthermore, the technology is changing rapidly. So for many customers it could make sense to go to a bureau, learn the advantages and disadvantages of electronic office systems and

keep a close eye on the future. Computer and Systems Engincompany and systems enter the certain of Richmensworth offers. Informal, a system written by the U.S. consultancy Bolt Beranek and Newmon, but significantly modified for the UK market. Informal grew out of Horman. Hermes, a messive program written by BEN for the U.S. Advanced Research Projects Agency (ARPA).

Offerings

Hewlett-Packard has just announced its own electronic reputation for efficiency and mail system based on its Series 3000 minicomputers, while MDS (Mohawk Data Sciences) is dis-tributing a system called WINC (World-wide Integrated Communications) developed Wiltek of Connecticut.

Other important offerings in-Associates Mailbox, General oranda electronically

Just as rare and the software to belenet. Some of these ere comrun the systems has become in-comparably more expensive, were adding additional facilities ware adding additional facilities to existing services.

The technicalities are unimportant to the customer who simply wonth value for money. According to the Urwick Nexos study, the cost justification of electronic mesoago systems is still in doubt.

The report notes "At a symposima on Computer in same Systems field in Oftawa in April 1981, the ability to demonstrate clearly the cost effectiveness of message systems was still open to doubt. That is not to an these systems are not cost effective, but rother that it is hard to show east effectivenose for a host of reasons, not least because valuing managerial and professional work is very difficult."

Most efforts to quantify the value of the electronic office fall down on this point. Even the difficult to justify in these simple terms.

Until there are sufficient electronic mail users to bring about the necessary economies of Bureaux were born when clude Wang's Mailway, IP Sharp may be that comnosing mem-Quickcom, IBM's trates the mind wonderfully.

GEC unveils strategy on marketing needs

THE General Electric Company, Britain's biggest electrical and electronics manufacturer, has until now conspicuously lacked any coherent strategy for realising the electronic office. This week, after almost a year's preparation, it is declaring its hand. It has set up a new com-pany, GEC Information Systems

(GECIS), headed by Dr Nigel Horn, previously in charge of public switching. It draws together the group's activities in private branch exchanges (PABXs), telephones and ter-minals, computers and Reliance, its private telecommunications subsidiary which will handle

Dr Horn describes GECIS' approach as "evolutionary, not revolutionary." It will not revolutionary." It will not promote any one technological solution as being intrinsically superior, but will aim to assemble office systems around the particular needs of each

"We ought to be able to stand back and give really pro-fessional advice," says Chris Ellis, technical and marketing director, who previously worked for IBM and for Nexos, the National Enterprise Board's former office systems venture.

Not surprisingly, though, as a telecommunications manufac-turer GEC sees the PABX as the starting point for most automated office systems. Its own entrant is the SL-1, a digital exchange based on tech-nology licensed from Canada's Northern Telecom which is designed to handle more than 200 lines. GEC has sold about 100 SL-1s in Britain and hopes that existing customers will prove prime candidates for office

GEC plans to offer a newly leveloped "black box" which will enable data terminals to be connected to the SL-1 on existng office telephone circuits. Dr forn believes that the range of. "Its speeds available through the PABX will be more than adequate for most office users rewiring will be economically attractive to many customates and into the form in which it can be transmitted on "packet-switched" attractive to many customers. GECIS aims to launch later this year two low-cost terminals, designed as desktop work-stations to be used in conjunc-

business?

computers.

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packages work?



Solving today's problems with a GEC Viewdata executive terminal

Dr Horn hopes that by proabout 100,000 units a year - he will be able to price them at less than £500 each.

The second string to GECIS' bow is GEC's 4000 Series minicomputers, originally designed with an eye to defence appli-The design of the 4000 is particularly well-suited to use in communications networks - the machines already in service in British Telecom's Prestel viewdata

Dr Horn plans to offer the 4000 as the hub of larger electronic office installations in which users need to communicate with remote computers. The machine is already programmed to carry out protocol conversion — that is, to "translate" between different computer languages - and assemble information into the networks, which are becoming increasingly popular as a means of sending data between computers.

As an optional extra, GECIS

tion with the PABX. Both will plans eventually to offer special be able to handle voice and programming packages which data simultaneously. The first will equip the 4000 Series to will incorporate a viewdata handle electronic mail and to will incorporate a viewdata handle electronic mail and to terminal, while the second will store voice messages and to be able to communicate with carry out tasks like preparing large mainframe computers. payrolls and accounting.

Dr Horn hopes that by pro-ducing in volume — he is ten-link between terminals conat levels of nected to the PABX and those atlached to local area networks (LANS)-high speed office communications circuits made from coaxial cable or optical fibre. Both Dr Horn and Mr Ellis are somewhat sceptical about the claims being made for LANS which, they argue, do not yet offer the cost-benefit advantages available from PABX-based

> **GECIS'** main reservations about LANs is that, at their present state of development. they do not in practice offer substantially greater transmission capacity than PABX-based systems and that as long as there is no agreement on common technical standards for the different types of networks, customers risk locking themselves into systems which might turn out to be obsolete

Nonetheless, GECIS will be prepared to supply a LAN developed by A. B. Dick, the U.S. equipment manufacturer which GEC acquired in 1978. Dick has supplied about 30 of the networks, known as Magnaloops, to American customers, primarily as the means of connecting communicating text graphics

GECIS does not at present plan to manufacture text processing equipment itself, though Dr'Horn says that it will probably offer to British customers the range of Magna machines developed by Dick in the U.S.

Product line

A. B. Dick's origins are firmly rooted in graphics equip-ment, though until recently its product line has consisted largely of copiers and duplica-tors based on mechanical tech-nology. Since GEC took over, it has been attempting to rejuvenate its product strategy by developing electronic office products, which it is now selling through its extensive marketing

According to Dr Horn, GECIS and Dick will co-ordinate their development work, to ensure that programmes carried out on either side of the Atlantic are complementary. They also plan to collaborate directly at a new development centre established in Phoenix, Arizona, about two

years ago.

GEC Computers and Dick have already joined forces to develop a powerful new minicomputer, due to be introduced later this year, and Dick is concentrating on developing techniques for document storage and handling which combine electronics and microfiches.

Dr Horn also hopes that it will be possible to sell GECIS systems in the U.S. through A. B. Dick's marketing organisation. But he says that no firm link-ups have yet been agreed, and that in the immediate future GECIS is likely to concentrate primarily on establishing itself



during the 40's. The basic design hadn't changed much since mass production began in the early 1900's.

principle, the introduction of a spherical typing element (golfball) in the early 60's machines marked a major advance for electric typewriters.

Although based on a 19th century mechanical The AES Alphaplus. The high performance typewriter

AES Alphaplus. The typewriter with a screen, printer and filing system.

It's the typewriter that makes all other typewriters obsolete. The typewriter that's so simple, even a two-finger typist can use it. Yet it's so sophisticated, it shows what's being typed on a screen before a word has been committed to paper. If your secretary is happy with the look of it, fine. If not, she just presses a button and simply alters the bits she doesn't like, without needing to retype the whole thing. She can also make as many originals as she likes without

leaving the room, the phone, and you, unattended It's the typewriter that keepsarecord of everything that styped. improvingefficiency to a remarkable degree. And it's so easy to use, anyone who can type at all can type on this.

It can also be used for more sophisticated tasks as required. For example, AES Alphaplus is compatible with a wide range of other AES screen typing systems, which means it can communicate with them in offices around the world. It does a lot more than other machines, yet only costs a little more than the best electronic memory typewriters.



with a built in screen and printer. It can do more than one job at once, typing and editing a document, whilst at the same time printing another at over 300 words per minute.

> current typewriters consider investing inan AES Alphaplus. It's the greatest leap forward since typewriters went electric.

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There are now about 75,000 word processors and electronic typewriters in use in the UK. Above: International Computers' DRS Wordskil 8801 word processing system

John Lloyd examines the social implications of advanced technology in the office world

Impact of computerised communications

AS WORKERS in manufactoffice workers and cutting down that in the two years it runs that the deal is only for two turing industry become more the need for clerical staff. the Government will not demand years has advantages. On the compulsory redundancies as a Government side the thought workers in offices "stagnated." passed them by: even the much increase paperwork of the con-ventional kind, and thus The most employment.

The electronic office is a shorts now replacing, an increasing number of routine clerical tasks. The first commercial are small, bringing information still-shaky relationship. and intelligence to the desks of

long term employment effects Technical change had largely of computerisation. But the of new technology. It also lays effects depend not solely on down that unions will be fully feared computer revolution of computerisation, but on consulted on the plans the fifties appeared only to independent issues such as level in the new equipment.

The most notable breakthrough in office computerisa-This is no longer the case. tion in recent months—and one which illustrates the case wellhand phrase for the gradual has been the agreement between replacement of paper-based the Government and the Civil replacement of paper communication by computerised communication. Computerised communication way for far-reaching develop ments, especially in the Inland Revenue and the Vehicle Licenscomputers were centralised ing Centre: it will also present monsters which required a new the Government and the unions bureaucratic army to feed with a sharp test of their barthem: the modern derivatives gaining structures and their The agreement guarantees

services.

consequence of the introduction consulted on the plans to bring

Advantages

But it does specify that "a number of jobs will be lost as a result of the introduction of new technology "—though these will be dealt with by a mixture of natural wastage and redeployment. The unions were not able, as they wished, to win what they saw as consequential benefits of new technology—a shorter working week. They have also been unable to secure a commitment to full redeployment of staff to expanded

Thus, for both sides, the fact

the need for clerical staff.

the Government will not demand years has advantages. On the the brute facts of the issue, restructuring their bargaining Argument still rages on the compulsory redundancies as a Government side, the thought Unions seldom wish to put a to recognise the gradual erosion. must be that if natural wastage stop to technical progressdoes not shrink Civil Service numbers rapidly enough, it by changing the terms under tougher demands can be made which it is introduced—yet they soon. For the unions, those cannot look with equanimity on officials reluctant to agree con- a shrinking membership, and

that it could be improved next

soled themselves with the view possible eventual disappearance.

Significantly, two unions did not agree to the deal—though their votes against in the Council of Civil Service Unions represents the service grades, saw an eventual end to their ally in the task. large messenger section as paper no longer had to be

signed with misgivings.

carried: and the left-led Society of Civil and Public Servants often in concert with manual tion, embryonic as yet, of new thought the conditions not unions, are belatedly facing up strategies by the unions in sufficiently tough. All unions to the problems new technology order to survice and—they trust brings by considering alliances -prosper once more.

At the same time, they have legitimate fears on health and

These misgivings grose from with other unions. The are also. though they often wish to delay between different types of it by changing the terms under workers and educating their it, by changing the terms under activists in the effects of computerisation, and the virtues of new technology agreements.

The matter is more urgent than most unions will admit. To be faced with a large scale safety, and a concern that restructuring of work is a for-numbers be kept up by increas-midable challenge for a rather ing services. Yet they are faced conservative union movement by a Government which has to face it in a recession with a were not sufficient to sink it.

The Civil Service Union, which back on Civil Service staffing, ment in power is daunting represents the service grades, and sees new technology as an indeed. Beneath the official ally in the task.

Such misgivings, and the same issues, confront all unions in the white collectory.

A property of the confront all unions in the white collectory.

The shape of things to come continued from Page 1

by Rolm of the U.S.

The list seems endless. It is no wonder that when asked the major problems encountered in office automation, some 48 per cent of companies questioned by Urwick Nexos replied that it was ensuring compatibility of

Most people agree that it will be years before standards for office automation are established. In the local area networking area, for example, there is a fierce disagreement between companies with a computing background and companies with a telecommunications background over the best way to run such a network.

The computer companies-Xerox, for example, or Logica, argue that computing power electronics research establish- accountants. Its intends that by either in the terminals them- ment in the world) has yet to 1992 some 1,000 employees, selves or in a separate con- show its hand in office automa- partners. troller is the most cost-effective tion. Its Advanced Communica-

Plessey announced its version around the PABX (private be launched this year. of an office network based on a automatic branch exchange); IBM's position seem the copper wires to everybody's desks are already in place.

There is a totally separate argument about whether a netand graphics or one which can cary video pictures as well is

Against this seething backtions—remains enigmatic.

IBM has signally failed to take a lead in the electronic office as it did in mainframe

AT and T. despite its vast resources and research capabilities (including Bell Labs, probably the most prestigious The telecommunications com- ary concept intended to enable

IBM's position seems to be every office must have one and that wiring up the office is more difficult than is commonly supposed and that it is better

to proceed slowly.
Its principal offerings are a work which can carry only text low cost stand-alone word processor, the Display writer, a small business computer and a text processing and distribution system called the 8100. It is ground, the position of the two committed to making it giants—IBM in computers and AT and T in telecommunication talk to each other. It has a computer software package inelegantly called DISOSS which streamlines document handling.

10-year strategy

What an IBM electronic office might be like is indicated by a system being installed at Arthur Young McClelland, the managers and accountants together tions Service (ACS), a vision- administrative staff will have cessing, access electronically to all the

able to do their own programming on special terminals.

The Arthur Young McClelland Moores plan is a 10-year panies are finding it hard to strategy and therefore one of maintain profits. the firmest indicators of how IBM believes office automation is likely to develop.

The nagging doubt remains that IBM is just as uncertain as the rest of the industry. Late last year, the Butler Cox Foundation established by the consultancy of the same name, visited a number of U.S. office automation suppliers to map their plans for the future.

Its most abiding impression was of the problems growth brings. Small firms often have electronics research establish- accountants. Its intends that by a clear perception of their niche in the marketplace-Wang in word processing or with Datapoint in distributed profor example—and therefore a strong sense of

mainframe and its 8100 Infor-spectacular growth from such mation Systems. Electronic a narrow base. So they widen mail based on DISOSS will be their horizens, but easily lose added and professionals will be their identity in trying to become all things to all men. The pace of change is not slackening and several com-

> Overall, the remains that the electronic office is a set of products looking for a market. It is manu-

facturer, not user, driven. Nevertheless, there will be cost benefits to be gained from office automation when the right equipment at the right price is available. Manufacturers will have to think harder about what people will be prepared to use. And as ergonomist Tom Stewart has pointed out, a terminal that prints "Hello" when switched on, is fooling nobody.

Muddled thinking and jargon will not help. A company spokesman told the Butler Cox tour: "The Unix operating system is a kind of a de facto standard now. So it's not panies — Rolm/Plessey or incompatible computers to comNorthern Telecom, argue it is municate with one another, has
Only logical to centre the office had numerous setbacks. It may around IBM's low cost small they cannot sustain their often are using it." Quite.

VOICE SYNTHESIS SYSTEMS OF TOMORROW

Area of vast market potential

WHILE MOST office automation systems are geared towards the written word, voice is still the most prevalent form of office communi-cations. There is a huge market for the various equip-ments that handle voice communications, from the tele-phone handset of today to the voice recognition and voice synthesis systems of tomorrow.

According to a market report published recently by the Yankee group, a Boston market analysis firm, voice manpulation equipment private branch exchanges, telephones and related equipment-represented a \$3.8bn market in 1981 and will grow to between \$77bn and \$83bn

in 1985. Before voice signals can be manipulated by computer equipment they must be trans-formed for their natural analogue waveforms into digital signals. The tech-nology required to do this is advancing very fast, driven to a large extent by the potential market for office equipment incorporating the ability of a computer to "understand" the human voice and "talk" back to the user. Among the first examples of such systems is IBM's "talking" mag card typewriter. The same type of technology is used by Texas Instruments in its "Speak and Spell" toys for young children.

Office applications

speech synthesis include a multitude of data entry verifications and corrections. Talking" electronic mail, for remote access to information on a computer system without a terminal, is another excellent application, particularly for travelling executives. In this case, alphanumeric messages are "transformed"

into oral communications. Finally, in the near future, most office machines will talk." to their users-to aid in training, service or maintenance, and easier input. For example, a copier might tell the operator to refill its toner. developer or paper.

According to the yankee group report, voice synthesis devices will become pervasive in both office and home applications as the semiconductor chip makers improve the quality of synthesised speech and bring down the prices of their

Voice recognition also has enormous potential in the tasks, such as numbers or specific commands. Commercially viable voice recognition systems for continuous speech recognition are unlikely to be available until the late 1980s. but when they do arrive, such systems would make the ultimate dictation machine which could automatically produce a., written copy of the speaker's:

A large market is expected to emerge this year for digital? "voice store-and-forward".
(VSAF) systems in which the speaker's voice is digitised so that it can be stored on a computer disk, then reconstructed to be delivered to the recipient. Such systems will be particularly useful for remote message pick up and is an alternative to written electronic mail — overcoming the objections of executives to

keyboards. Although digital VSAF represented only a \$6m mar-ket in the U.S. last year, sales are predicted to grow to over \$350m by 1985.

Louise Kehoe

Data, voice and text

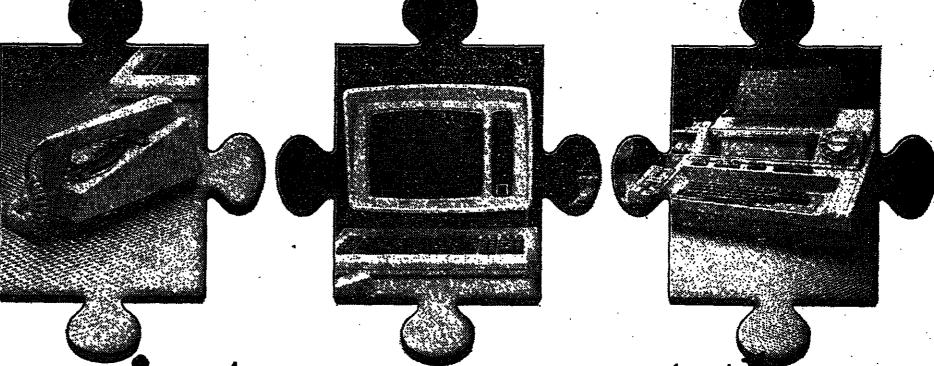
In the form of data terminals, telephones and telex, these separate systems are indisputably the three prime methods of business communication.

The trouble is, although each system becomes increasingly sophisticated as technology improves, there has always been one major drawback. An incapacity for each of the systems to communicate with the others.

In effect, there have been barriers preventing intercommunication caused by the varying communication patterns and characteristics of each of the systems.

Meaning that they've all spoken a different language. Until now

For ITT Business Systems has introduced a common denominator in the form of new technology which uses the Information Transfer Module. ITM for short.



Inly we can interconnect them so they can intercommunicate.

In converting the different signalling languages of each of your communication systems, the ITM links them all up together by effectively removing the barriers which have so far kept them apart.

But to explain precisely how it all works would take a technological age.

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The applications are unlimited.

And surprisingly enough, this apparent miracle can be accomplished using your existing equipment.

No need for any replacements. We will advise you how to add this new technology to your current systems.

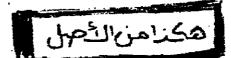
Your present telephone, telex and data network systems are simply waiting for Information Transfer Technology. And in order for them to talk to each other, all you have

to do is talk to us. Write for details to TTT Business Systems, Lion Buildings, Crowhurst Road, Hollingbury, Brighton, Sussex BN1 8AN.

We have the technology to transfer all the information. quickly to you.

ITT Business Systems is the business communications arm of Standard Telephones and Cables plc.





FT-ACTUARIES INDEX

Still no equal after 20 years

By R. Pain and J. Plymen

LAST SATURDAY was the standard for portfolio performance studies over both the short calculation of the FT-Actuaries and the long term. series of share indices. After two decades, this comprehensive statistical service is still unequalled by any other national index in the world.

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UK investors can now refer to a vast amount of statistical material covering a particularly interesting and testing period. This past index data is readily accessible by subscribing to the 20-year record published by

The FT-Actuaries service is much more than a single index. embraces the All-Share Index, with its 750 constituents, broken down into as many as 40 groups, complete with divi-dend and earnings figures — which are lacking in many of the well-known national indices to be found overseas. There are also related fixed-interest in-

It was in 1931 that the two actuarial societies, the Faculty of Actuaries in Edinburgh and the Institute of Actuacies in London, first produced what was called the Actuaries Investment Index. Covering some 200 shares and debentures, it was calculated on a monthly basis.

By the early 1960s, however, it was obvious that this original series was obsolete and in dire need of modernisation. The objective was wider coverage and daily publication; and by that time computer facilities were available, thus permitting the use of arithmetic averaging and comprehensive weighting techniques hitherto impractie-

The logical development was for the actuarial organisations and the leading financial newspaper, the Financial Times, to enter into a joint index project. The design and construction were the responsibility of the actuaries, with the newspaper staff collecting the statistics, and using the computer facilities of NCR

The All-Share Actuaries Index with its weighting based on current marker valuation is designed to reproduce the performance of an equity portfolio invested proportionately in all the more important companies on the London Stock Exchange (over 90 per cent of the market capitalisation of the London Stock Exchange is in fact covered). It is thus the ideal

In fact, one of the most common uses of the All-Share Index is as a measurement yardstick for the assessment of portfolio performance. For this purpose it is much more suitable than the FT 30-Share Index.

The FT 30-share index provides a valuable short term market indicator with its hourly publication and its reliance on the 30 most active stocks. It is therefore ideal for judging the "ione" of the market. Over a period of years, however, it lags behind the modern series, mainly because of its geometric averaging.

How a comparison can be made

For example, in April 1962 the FT 30-share index stood very close to 300. Consequently a ready comparison can be made between the subsequent performance of the two Indices by changing the FT Actuaries to a starting figure of 300 rather than 100. The top chart showing the performance of the all-share index since 1962 is scaled to a base of 306.6 on the right-hand side and to a base of 100 on the left-hand side. On the alternative basis the FT Actuaries can be said to have reached 600 in 1972 and over

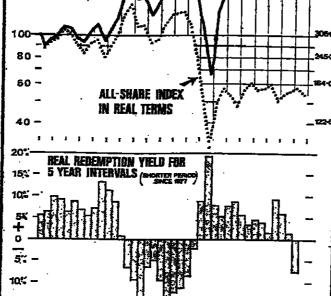
In contrast the FT 30-share cent (the yield recorded by the inflation by some 21 per cent ndex now stands at only 560, FTA 20-year gilt index in April p.a. index now stands at only 560, a direct reflection of the downward bias inevitably imparted by the geometric averaging.

1,000 at the all-time high of

overall performance, capital and income combined, is best indicated by a "redemp-tion yield" based on purchasing equities at a cost of 89.23 in June 1962, reinvesting all the dividends and selling the shares for 313.12 in December 1981. This can be regarded as reproducing the actual experience of an investor aged 45 taking out a single premium self-employed pension policy, investing 100 per cent in equities and cashing in the contract at age 65 in exchange for an annuity. On this basis the monetary return comes out at some 12.4 per cent per annum.,

Over the same period the return from an equivalent giltedged stock is only 6.24 per have

350-FT-ACTUARIES ALL-SHARE INDEX 300 -250 -200 -



1962 '64 '66 '68 '70 '72 '74 '76 '78 '80

1962). Hence equity investment has doubled the gilt-edged yield over the 191 years. Over this period the price indices increased 3.15 times, representing a compound rate of growth of 6.65 per cent p.a. The corresponding move in the dividend 18.44, by 4.52 times, with a

the indices have to be related practice these are taken at half-been earned evenly. Two-thirds yearly intervals, so that the of the price gain from the index study will be made most occurs over the first 10 years. conveniently from June 1962 to This can be most clearly shown 53.6 to 308.8, equivalent to a figures are calculated every six compound rate of growth of months so as to include the

can one expect any bank to go

mercial banking prudence in its

as I am to see the end of my old company, for whom I

really want?

. - John M. Lengham,

Even the dividends with their better performance still lag behind the inflation by some 1.4 per cent p.a. However, if allowance is made for all the dividends as well as the capital changes the overall return from sponding move in the dividend the equity portfolio comes out index has been from 4.08 to at some 3 per cent in real money (12.4 per cent monetary compound gain of 8.04 per cent. return reduced by 9.4 per cent To get the "real" figures, for the inflation).

The real return of 3 per cent to cost of living figures. In over the whole term has not occurs over the first 10 years. December 1981 covering 194 by calculating real returns years. Over this period the cost over successive 5 yearly periods of living index has moved from as in the chart above. The 9.4 per cent p.a. Equity prices effect of the December 1974 have thus underperformed low.

years 1962-1967 and between insurance brokers and food 1974 and 1980 provided quite retailing in 1967. Notable good a high real return if sold after exactly five years or in December 1981. Purchases during the years 1968 to 1973. however, made at historically high prices and sub-normal yields (sometimes below 3 per cent) had to contend with 5 yearly inflation rates of up to 16 per cent p.a.

Over this particular period therefore, with the performance severely affected by rapid inflation equity purchases were best avoided. It must be admitted that 15 years ago "inflation beating" investments were hard to find. Traditional gilt edged stocks were obviously a poor alternative as yields were rising and prices falling. The least unsatisfactory investment over this period was presumably short-term deposits paying a rate of interest rather below the inflation rate.

When index linked would be best

If a similar situation were to arise in the future of course, investors would be able to switch from equities into the index linked government stocks with an assured real return currently of between 23-3 per

The pattern of real dividends shows the impact of the high inflation rates of 1973 to 1976. Both before and after this period dividends have kept pace with the rate of inflation.

A glance at the daily group and preferences in 1981. price indices shows a divergence between the long term performance of the different categories. On April 7, 1982, the highest index number in electricals at 1,264 compared with motors, the lowest, at 93 (compared with an all-share index of 320). Naturally quite a number of groups have disappeared over the period as industries have declined or been nationalised (steel, machine tools, building, rubber manufacturing etc.).

Some of the initial categories have been split into sub-sections while other groups have been put together. For example, heavy electricals and light electricals have been combined.

Equities bought during the New groups were set up for performers among the more important groups are oils (683), food retailing (591), insurance brokers (431) and property (442). Particularly poor results are recorded by composite insurance (156) and textiles

> It is easy to job backwards and to show the benefit that could have been obtained by keeping in the right market and the right group ever the 20-year period. Making the correct policy decision at the right time is of course fraught with danger. Nevertheless, a comprehensive system with prices, dividends, carnings, etc. combined with a complete long-term record of these figures as provided by the FT/Actuaries service is an essential tool to be used with other available market and economic indicators so that the skilled investor can obtain an above average real long-term performance.

A major extension of the service came in 1976 with the starting of improved fixed interest stocks indices. These provide a price index covering all alli-rdged securities and a matrix indicating the pattern of yields over different coupons and maturity dates. Also included is the cumulative dividend factor for each year which as time passes will allow the five-year interval yields to be calculated as has been shown above for the equity market, These indices were further extended to cover debentures

joint committee is investigating the calculation of a cumulative ex-dividend factor for the equity market (similar to that for gilts). This will give a more accurate figure for equity dividend payments through the year, and will enable a roll-up index to be calculated which is wanted by. among others, managed pension funds, to assess investment performance where the dividends are automatically re-

Mr R. Pain and Mr J. Plymen are Fellows of the Institute of Actuaries. They were both inrolved in the establishment of the FT-Actuaries index in 1962.

Lombard

Last laugh for 'funny money'

By Samuel Brittan

When the decision to switch of that welcome was that the public expenditure control to a widely welcomed—a year ago this was not because anyone supignored.

basis for expenditure planning assumption is optimistic the was based on "funny money" or eash total will be low; if it is what the statisticians called "volume terms." The practical effect was to compensate spending authorities not merely for the general inflation rate but after allowing for inflation. for particular increases in costs, however large.

Thus an increase in the number of teachers counted as higher public spending but a hig increase in pay did not. It made no difference if public authorities switched from com-ponents or materials which were rising in relative price to those which were falling or vice versa. So long as "volume" was the same such economies did not count as genuine savings. The cash limits system was

among other things, a stop gap attempt to plug resulting inefficiencies and tighten control. But as the limits were superimposed on an expenditure planning system designed in volume terms there was a large element of locking the stable door after the horse had holted.

The Armstrong Committee recommended a switch to "cost terms." This is best regarded as the nearest equivalent to cash control in an inflationary world. If you like it is indexation without "funny money." To take a hypothetical, but alas rather topical example, of a battleship costing £100m today. Let us assume that inflation is 10 per cent, but that the battleship will cost £115m in a years time. Under the bad old "funny money" no increase in expenditure was registered. Under pure cash measurement, the spending increase is of course 15 per cent. In "cost terms" which allows only for inflation but not for the increase in the relative price of battleships, the spending increase is approxi-

mately 5 per cent. Although I was a member of the Armstrong Committee, I welcomed the switch to cash as the advantage of being in the tax revenues. But the condition money".

Government was crystal clear cash basis was made—and about its inflation assumptions. The point which is difficult for

sceptical politicians to grasp is posed that inflation was about that it does not matter exactly to become zero or could be what inflation assumption is made for later years so long as It was because the previous it is stated. If the inflation pessimistic the cash figure will be high. In either case the reader can see the rough planned path for public spending

Imagine then my horror when the Public Expenditure White Paper appeared as a string of meaningless numbers with no clear-cut inflation assumptions and without any statement of envisaged percentage increases even in money terms for any entegory other than the whole planning total.

Mr Terry Ward, in a specialist paper for the Commons Treasury Committee enald find no inflation assumption for 1982-3 He therefore took the official retail price index forceast between the fourth quarter of 1981 and of 1982, of 9 per cent On this basis there is almost no real increase in spending

between 1981-82 and 1982-82. For later years some inflation assumptions are given, but the position is even more confusing. The White Paper states that the avorage cost of expenditure in 1983-1 and in 1984-5 will rise by 6 per cent and 5 per cent respectively. This has to be due out of a chapter on the social security. The Financial Statement ("Red Book") on the other hand which was printed later, gives GDP deflators for the same two years of 7 per cent and 61 per cent.

It is not a question of which document is right for so far ahead. Both will obviously be wrong. But when it is hoped to stabilise or reduce slightly the real value of public spending it is extremely important to state the inflation assumptions if cash figures are to make any sense. It would be a pity if these

and other crudities were to tempt the Treasury Committee to condemn cash planning altogether. But unfortunately easier to understand and having the White Paper may play into the hands of those who are same kind of actual money as longing to bring back "funny

Letters to the Editor

The bumpy road to Stone-Platt's receivership

From Mr J. Langham businesses who so far have managed to survive, nor can the failure be blamed on the conclusion from the conclusion from the plethora of general Press comment, that the only thing that ment, that the only thing that went wrong with Stone-Platt appointment I believe came far Industries was that it had too late to have any chance of management and it is extremely difficult to see any justification for this employees. To make matters attitude. The record is there for all to see. The Midland matter attitude to see any justification for this employees to make matters attitude. The record is there were appointment I believe came far serious misgivings over the employees to management and it is extremely difficult to see any justification for this employees. To make matters attitude. The record is there were appointment I believe came far serious misgivings over the employees to manage at the scapegoat. drew their support. Nothing in direction from the Board which my opinion could be further has clearly failed to take the from the truth and I do believe difficult decisions that were so in fairness to everyone concerned that somebody should I am certainly prepared to take observers would, I think, say try to put the record straight. my share of the blame as a that the Midland had already My qualifications for attempting to do this are threefold— I was a lifelong employee of Sto 2-2 rel and for the past 14 that the Stone businesses — Finally we have this talk years the executive director in railway electrical equipment, charge of one of the operating pumps, propellers, and foun- What does this mean? I vendivisions. I bought the ships' propellers business last year when Stone-Platt had neither the resources nor the confi-dence to continue with it. And

Bank for many years. Platt never had an ounce of industrial logic. It simply conglomerate of totally different engineering businesses operating in diverse industries. As a result there rationalisation or economies in manufacture. research, or have a much better chance of longer successful for whatever marketing. All it really did was prospering under new owners reason, and regenerating new to enable companies to continue which should have been under Stone-Platt. And in this scrapped long ago, and as a connection, contrary to what

was surely the management and direction of the Platt textile machinery business over pension rights they had earned their own, I believe the appointmany years. It could not have been the business itself because the problems of worldbecause the problems of world-ployment, and not one of my to have been in the best in-wide recession, high exchange managers has left. I believe terests of the majority of the rates, and soaring interest charges were not significantly businesses. different or worse than those facing many other engineering almost a conspiracy to make the. St. James's, SW1.

obviously needed, and for that on doing this? Most impartial member of the Board at the

By contrast, it must be said support of Stone-Platt. dries - have each been relatively successful in the face of the same difficulties. Profits have, of course, slumped, and losses have been made in some of the plants, but overall they fied customers of the Midland have not been disastrous. Their ank for many years. managements may well not The merger of Stone and have been brilliant, but there would have been no real problem for these businesses to survive either together or

separately. Pumps and propellers have Stone-Platt is in fact a good industries: As a result there already been sold and now the was never any scope for remaining businesses will go, too. My guess is that they will than ever they would have done result to starve other businesses. has been stated in some Press worked loyally and happily for which should have been deve- reports, may I take the oppor- so many years, and deeply loped.

tunity of making it clear that sympathetic as I am for those But what went really wrong every single one of the 200 em- of my former friends and col-as surely the management ployees of Stone-Platt whom I leagues who may now face retook over have had whatever dundancy through no fault of totally safeguarded as well as ment of a Receiver for Stonetheir other conditions of em- Platt will in the long run prove the same is true of the other employees concerned.

Then there seems to be

The Japanese way with interest rates From Mr A. Horsnail

Sir. — May I develop your important point (Leader, April 1) about interest rates in Japan where savers not borrowers enjoy the tax breaks. Here in the UK it works the other way Industries was that it had too late to have any chance of management and despite re-hard-nosed bankers who at the reversing the decline), there peated failures to meet fore round; industrial borrowers first sign of real trouble with has been a lack of effective casts for two long years. It making profits enjoy an interest played a leading role in two rate subsidy through offsetting corporation tax whereas private rescue operations. How long and overseas savers are penalised through withholding tax on dividends. If these concessions were removed some believe the general levels of UK interest gone well beyond normal comrates would be significantly lower.

The new issues of indexed UK Treasury Bonds are unsatisfac-tory substitutes as they are inevitably restricted to Governture to suggest that it can only ment borrowing and thus offer mean in its simplest terms no help at all for industrialists' needs. Furthermore, indexed Government bonds provide an that when a capitalist is successful that's fine, but when he fails he blames the system. Well, the only, alternative is open-ended opportunity for any less responsible future UK clearly there in the form of governments to abandon fiscal state control with Mr Benn ready and willing to provide it.
Is that what failed capitalists discipline and to concede any levels of inflation. A better alternative might be to stick to fixed coupon borrowing but abandon tax on dividends on On the contrary, let us recognise that what has happened to corporate as well as Treasury

example of capitalism at work
— terminating organisations Interest rates, as well as acting as a tool of monetary discipline and managements which are no cannot be dissociated from exchange rate policy. Time-lags occur in virtually all setlements ones to take over. And sad for overseas trade which, as the mirror image of inter-bank settlements, determine foreign exchange rates. As interest rates fall those currencies in trade surplus tend to rise, whereas currencies in trade deficit weaken. This point integrates with smaller or larger public sector borrowing, respectively Therefore only countries in trade surplus can afford to increase domestic borrowing.

This important point was upset by the massive expansion of the Organisation of Petroleum the massive expansion of Exporting Countries' trade surpluses throughout the 1970s where small domestic demand was incapable of shouldering the task of sufficient economic expansion to keep the rest of the industrial world employed.

Efforts by the U.S. to take on this responsibility coincided with separate domestic policies to de-regulate oil and other energy prices causing inflation. The fact that U.S. federal funds for first class borrowers persist appearance of an awful big stick to protect that economy, worthy

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Nigerian imports

30 that foreign currency would not be available for uninspected goods arriving after April 16, UK exporters should be aware that any amendments to letters action. of credit of which they are bene-ficiaries, and advised and confirmed to them by correspondent forms then advising/confirming Crossoceans. banks of Nigerian commercial banks are not obliged to con- 6 Princes Gate, SW7.

banks, may or may not be cern themselves with shipment

Whatever the truth behind imposing inspection where pretime and expense to the trans-

credit expressly refer to M H. T. Legg,

accepted by the exporter at his dates embodied in approved M iscretion. forms. If the documents pre-Normally amendments to sented to advising/confirming From the Secretary, Crossoceans letters of credit received by banks are exactly in order then Sir.—The article by your exporters are welcomed since they must be paid. Obviously if World Trade Editor (April 1) they usually extend shipment UK exporters reject letter of the property of the credit amendments that request on Nigerian imports needs claridate or remove impossible credit amendments that request ficultion. clauses but any amendment inspection and ship under letinspection and ship under let- for first class borrowers persist ters of credit where M form at 14 per cent, whereas consumer the Lagos Times report of March viously goods were exempt may shipment dates are past, the prices have failen to 7.5 per 30 that foreign currency would be rejected unless the exporter paying bank has a risk in cent or even lower, has the be rejected unless the exporter paying bank has a risk in cer feels that pratically the inter-position of SGS will not add Nigeria—it would be natural if to Nigeria—it would be natural if to wave at world markets. Is it paying banks did not welcome not the Japanese way with any opportunity to transfer that interest rates, which has helped strion. any opportunity to transfer that Similarly unless letters of risk to exporters.

of examination?

A. G. Horsnail. 22, City Road, EC1,

For the convenience of readers the dates when some of the more important company dividend statements may be expected in the next few weeks are given in the following table. The dates shown are those of last year's amountements except where the forthcoming board meetings (indicated thus') have been officially published. It should be emphasized that the dividends to be declared will not necessarily be at the amounts or rates per cent shown in the column headed "Announcement last year."

.....May 27 (nt. ni)

Akroyd and Smithers May 11 Int 3.5

Assoc. Paper Inds...May 12 Int. 0.6

BAT Inde. Apr 28 Int. 6.5

Ireland., May 14 Final 3.5

Scotland...Apr 13 Final 9.5

Hapburn Apr 14 Final 1.4

Bleckwood Hodge Apr 14 Final 1.5

Blec Circle Inds. Apr 29 Final 10.0

Boots May 21 Final 4.625

British Home

Stores ... May 10 Final 2.75 British Sugar .. May 12 Int. 7.5 Britten

Brockhouse May 22 Int. nil Brown Boveri Kent...Apr 10 Froat 1.2

(Matthew) May 7 Int. 1.35 *Burmah Oil ...Apr 14 Final 5.0 Control Final 2.6 Control Final 2.6

European Farries...May 17 Final 3.45

Ferries...May 11 Final 3.45
Fight
Refuelling...Apr 23 Final 1.6
Franch Kier ...May 5 Final 2.3
Gerrard and ...May 5 Final 2.3
Grand ...May 15 Final 9.
Grand ...May 15 Final 9.
Grand ...May 15 Final 8.6
Final 8.6

(Matthew)...May 6 Final 6.552

Queensway ... Apr 21 Final 4.0

Queensway...Apr 21 Final 4.0
*Hawkar
Siddelay...Apr 21 Final 5.2
Heath (C.E.)...May 19 Final 7.4
Hepworth (J.) May 5 Int.0.79
House of

Johnson and
Firth Brown...May 22 Int. 1.3

Kunk Save
Discount, May 6 Int. 1.6
Discount, May 7 Final 1 875
Land Secs. May 16 Final 7.0
Laporty Inds. Apr 23 Final 3.5
Lioyde and
Scottsh. May 21 Int. due

London and Morthern...May 30 Final 2.35
*London Brick...Apr 15 Final 2.532
*Low and Boner Mar 29 Final 9.5
*Marks and Spencer...Apr 28 Final 2.3

*Manzies (John) Apr 20 Finst 5.0

Molgan Crectible...Apr 15 Final 3.0

Pearl
Assertance Apr 14 Final 13.0
Pearson
Longment May 5 Final 4.605
Pearson (S.) May 5 Final 6.25
Pearson May 18 Final 6.25
Pleasurana May 18 Final 5.3
Ranka Hovia
McDoggell May 21 Int. 1.524
Rensome Hoffmen
and Politard May 20 Int. 2.0
Rediearn Nat

Trefaigur House...May 13 let. 3.0

Ameld...Apr 23 Final 3.3 UDS.May 7 Final 3.61

Breveries. May 8 Int. 2.5
WhitbreadMay 19 Finel 4.9
"Wimpey (G.)...Apr 29 Final 1.7
"Board meeting insumated. † R

Surge in publishing profit lifts Pergamon to £5.9m

A DRAMATIC improvement in charging £600,000 expenses on profits from the publishing electronic publishing, computeractivities of Pergamon Press from £3.74m to £6.99m offset increased losses in other parts of the group, and the pre-tax figure finished 1981 £1.37m ahead at £5.87m. Group turnover fell from £110.82m to £71.04m.

£621,000 and securities dealings made losses of £661,000 compared with profits of £1.03m. group's results do not include its share of the £1.22m (£11.26m) pre-tax losses of 77 per cent Owned BPCC (reported on April securities.

Mr Robert Maxwell, chairman of this private company, says the directors are satisfied the siderable improvement over 1981. The advance in publishing profits included £162,000 (nil) profits was in the face of the continuing world recession, he says, and were struck after which included £3.25m group

ments and £2m on capital equipment. It has no bank or other

borrowings and at the year end had £6.4m on deposit and £4.5m

four shows: publishing £31.25m (£26.9m) of which 75 per cent was exported; printing £3.31m (£3.98m); and dealing in securities £35.48m (£79.94m). Taxable profits included £152.000 (£1).

relief payable to BPCC. After minority debits of £29,000 (£9,000 eredits) and extraordinary losses of £468,000 (nil) the profits availthe group, and the pre-tax figure finished 1981 £1.37m ahead at fi remaining shares in which are owned by BPCC.

Pergamon Oxford has a profit charing scheme whereby staff are paid a profit sharing bonus on July 1 and at the end of December each year. The directors propose to distribute under the scheme on July 1 and at Christ. propose to distribute under the scheme on July 1 and at Christ-mas 1982 the sum of £325,000 (1981—2214,000). This is roughly the equivalent of 7.5 to 10 per cent of each person's salary who qualifies under the scheme. The number of people who will benefit is 400, the same as in 1981.

Growing confidence at Fisons

THE WIDESPREAD changes that have taken place in nearly all activities of Fisons, gives it a much reduced and more competitive cost basis that enables the group to face the future with growing confidence, says Sir George Burton, the chairman, in

In 1982, Fisons should see the further benefits of the restructuring undertaken last year, the extraordinary costs of which have been borne in the 1980 and 1981 accounts, he states. Extra-ordinary charges for these two years totalled £30.56m.

Pre-tax profits for 1981 in- cial scope to develop its horti-creased from £3.8m to £9.3m, on culture, pharmaceutical and turnover of £494.4m (£453.7m). The improvement came from the effects of cost savings and more aggressive marketing starting to flow through into profits — as

reported March 2. Referring to the sale of its fertiliser division to Norsk Hydro. Sir George says the disposal is regarded as a major step in the strategic development of the Fisons' business. significantly reduce the level of gearing and will subsequently provide the group with the finan-

THE ROYAL BANK

OF CANADA

U.S. \$100,000,000

Floating Rate Debentures due 1987

In accordance with the provisions of the Debentures,

notice is hereby given that the rate of interest for the

period from 7th April, 1982 to 7th October, 1982 has

been fixed at 15.4375 per cent. per annum.

On 7th October, 1982 interest of U.S. \$392.37 per

U.S. \$5,000 nominal amount of the Debentures and

interest of U.S. \$3923.70 per U.S. \$50,000 nominal

amount of the Debentures will be due against interest

Coupon No.1.

Swiss Bank Corporation

International Limited

culture, pharmaceutical and scientific equipment businesses. While not looking for any

significant improvement in the economic environment, the group aims to continue to exploit its potential in 1982. The directors say it is now evident that many of the immediate problems have been grasped and gains are being made in the market. The group is in a leaner and fitter businesses operating on an inter-

High priority has been given to stringent cash management, which together with resources released by restructuring, has confined the net cash outflow to £0.9m, against £2.6m in 1980. Working capital ratios improved in all divisions as a result of the vigorous cash management procramme and the group's cash needs remain well within its committed facilities.

Group headquarters has contributed to the group's improved performance in 1981 by moving from the centre of London to a less costly single office in lpswich and reducing the numbers to make a tighter move effective centre. Costs in 1981 were well down on budget and savings of £1.5m are expected in 1982 compared to the old structure

Meeting, Centre Point, W.C, May 18, at 11 am.

RTZ/TUNNEL

The recommended RTZ offers for Tunnel Holdings have now

last connection with the John Crowther Group early in February, an era in textiles came to an end. Mr Hyman was to the sixties what Sir Freddie buccaueering entrepreneur for whom events turned sour. Two months ago, Mr Hyman

sold a 33.5 per cent stake in the Huddersfield company held by his family trusts. The sale took him out of a field where, for a while in the sixties, he had been a giant figure, merging companies, featuring in the papers, talking of a life in

Between 1961 and 1970, he built Viyella into a massive texthe concern, absorbing others such as Van Heusen and Cyril Lord Carpets along the way, before he was deoosed in a boardroom coup just before Christmas 1969.

He ran Viyella with what might be described as strong per-

sonal control; executives came and went with almost as great a rapidity as his turnover in mer-chant banking advisers.

Sixteen months after leaving Viyella, Joe Hyman was back in textiles with a bid for Crowther. Only this time he was in Yorkshire rather than his native Lan-cashire. Once again be proclaimed he was about to create another empire, this time in woollens and worsteds as he had. once before, in cotton and man-For 10 years he pursued the

aim with apparently decreasing enthusiasm, and a year ago he sold 20 per cent of his stake to Trevor Barker, a Darlington accountant who had been involved in a northern travel business and is now chairman of Findlay Harware Group, of Glasgow, and placed another 35 per cent with the institutions.

Mr Barker had been approached by Hyman in 1980 to see if he could help pull the

He was having problems of living in London and acknow-

ledged that the business could

Taxable profits of Trident

Computer Services for the first

six months to January 31 1982

fell from £162,000 to £143,000

on marginally higher turnover

of £1.31m, compared with £1.27m.

Earnings per 10p share are given as 2.8p (30) and an interim dividend of 0.5p net (nil)

WHEN Joe Hyman severed his something with it, but that I could rise to £200,000. could not work with Joe Hyman for no other reason than we were two very strong characters and he would not see things my way, and I would not see them his way and that there would be inevitable clashes.

AS JOE HYMAN BOWS OUT .

Trevor Barker is new

force at John Crowther

BY ANTHONY MORETON, TEXTILE CORRESPONDENT

"He respected this view. What I saw was a business that had had a lot of money spent on it over the last 10 years in modern equipment and machinery, but that it had suffered at the hands of a bad exchange rate. It had a tremendous volume problem that they could only fill by meeting the Italians head-on with

"He had solved a lot of that by cutting the labour force in the years 1978-80 from 850 to about 200. But the company

Hyman had found that, beset by the worst recession the industry had known, he had been unable to do for Crowther what he had done for Viyella, despite walving all dividends and not taking a salary. Crowther had lost money in seven years of his 10-year reign. But he did bequeath Barker a modern, efficient concern.

When Hyman arrived, the company was operating with 1,000 old-fashioned looms; these have been reduced to 26 of the latest Sulzers from Switzerland. The smaller workforce is also much more efficient. In July, of his family trusts, Mr Barker 1978, the 740 employees were now has 24.1 per cent of the producing an average of 1.7 pieces of cloth a week (a piece is around 70 yards). Three years later, the average from 205 workers was 2.85.

Trevor Barker attributes the improvement partly to a change of management, partly to new equipment and partly to energy

"When we had 1,000 looms our energy system was anti-quated. By re-siting the small number of modern looms in a not go on like this.

"I had a good took at the business and saw I could do in energy costs alone. This figure

the first six months they have

been preparing for the launch

of new products and the expansion of the company's engineering service base. Expen-

diture incurred by these activities, and investigating

further investment opportunities.

has been fully written off in the

new products and new invest- subsidiary.

Trident Computer profit slips to £143,000

"What we have done is to put the looms into about a quarter to a third of the site and then put up the rest of the space on the market. We have let about 15 per cent so far.
"On the production side, the

plant is now well balanced, but we shall be putting in more looms. Over the next two years we shall get another 12, which we should be able to pick up secondhand. There are plenty of those around now."

On the cloth side, the company the market leaving that to the Italians. In future, it will be in higher-quality material, trading at the "top end of the middle range."
"We are also going strongly

was then in the position of into men's cloths, which is new having used up a lot of its for us, and we hope to rereserves and didn't know where it was going. It needed a driving force to push it along."

West Germany and other " northern European countries."

Mr Barker comments that having got the textiles side right and the property moving, the company will now look to acquisitions to help it degear.

"At the moment, gearing is about 70 per cept, with £1.1m of borrowings on capital of £1.5m. This has slightly deteriorated in the present financial year."

Acquisitions will not neces-sarily be in textiles. "We might look at light engineering, for instance, but we would not go into anything capital intensive." As a result of the Hyman sale now has 24.1 per cent of the capital with the institutions holding 60 per cent and the small

shareholders the rest.

After a pre-tax loss of £911,377 in 1980, Mr Barker believes the corner has been turned, with the loss down to £227,000 in the first half of 1981. During the latter half of the year, the company was even operating profitably for a time, which gives hope

for 1982. "We are now very much a recovery stock," he says, and even on a cold, wet night in Huddersfield it is possible to

CITIBAN(

RECENT ISSUES

issue price p	Amount paid up	Ranuna Date	19 High	82 : Low	Stock	Closing	+ or	DIM P.	Covere	A Leigh	9.5 6.5
 140 148 15 108 - 4250 199 1 1 120 130 1 150	FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF	14,5 26,3 15,4 - - - - - - - - - - - - - - - - - - -	146 212 28 135 25 25 250 93 275 124 170 30 42 141	140 185 19 122 21 27 250 89 267 125 137 391,	AIM Group 10; Amersham Cambrian & G Dew (Gaorge) Fleat Holdings Greenfriar Wa sto Technolo; Rimm. Bus. 3; Leisure Inds. 200cconics 10;	en.7ipi 28 120p 22 120p 22 120p 252 1252 1252 1267 1267 1268 1267 1268 1267 1268 1267 1268 12	+6	95.7 517.5 55.0 561.5 F1.4 53.5 52.8	4.0 2.3 2.8 4.7	5.5 	6.1 6.1 8.1 6.2 6.2

FIXED INTEREST STOCKS

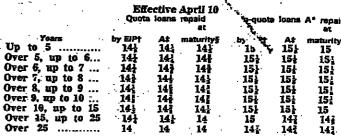
significant contributions to profit	FIXED INTEREST STOCKS								
in 1983, they say. Revenue from established services and product lines is firm despite continuing the recession. Pre-tax profits included	Issue 57 259 1982 Stock 5	price P							
interest receivable of £44,000 £39,000) and tax tock £74,000 (£36,000). Last year there was also an extraordinary surplus of £7,000 on the disposal of a former subsidiary.	100 £25 30 7 353, 253, Barciays 163, Ln. Stk	1 01:2 2:4 + 14 6 :							
steed Floating Rate Notes on of the Holder at Par	1000 F.P 1001; 993; Do. 1416; 4463	97g 12p:							

"RIGHTS" OFFERS

issus		Renunc.		19	82	Stock	aria Berga	+or
P	Ag	•		High	Low		85	!
10 125	Nil Nil	21/4	20.5	212pm 21pm	2pm	Ansbacher (H.) 5p.,, +., Beazer (C. H.) 10p.,,	Zpm I6pm	12
A51 70.	NH	15/3	- 1		276 DIU	Bond Corp	41 ₂ pm	'
40 30	F.P.	83	28/4	42	- 3B :	*Clyde Petroleum *Energy Finance 10p		; + 4
160 A82,25	F.P.	22/3	29/4	188	164	First Castle 10p	184	!
- 6 (NII	19/4	21/5		12pm	M.I.M Platignum 5p	7 bw 82bw	+ 12
98 74	F.P.	16/4 8/4	4/6 6/5	3pm 106	98 I	Riley Laisura St. George's Grp. 10p,	105	+1
110.	F.P.	25/5 6/4	23/4 27/4	167	1412:	Security Centres Shaw & Marvin 10p	150 15	!
10	F.P.	24/5	23/4	1212,	1012	Sturia 10p	1012	

Renunciation date essetly last day for dealing free of stamp duty. In Figures based on prospectus estimate. In Indianal rate paid or payable on part of capital; cover based on dividend on full capital. In Assumed Childrend and yield. I indicated dividend: cover relates to previous dividend, P/E ratio based on previous year's earnings. Finding armings armings. Finding the dividend and yield based on prospectus or other official estimates for 1982. Q Gross. T Figures assumed. If Figures or report awaited. I Cover allows for commission of sheres not now ranking for dividend or ranking only for restricted dividends. I Figures or report armining only for restricted dividends. I Figures or ranking only way of capitalisation. I Offered to holders of ordinary shares as a "rights." I issued by way of capitalisation. I I shared in connection with reorganisation.

Public Works Load Board rates



* Non-quota loans B are 1 per cent higher in each case than non-quota loans A. † Equal instalments of principal. † Repayment by half-yearly annuity (fixed equal half-yearly payments to include principal and interest). § With half-yearly payments of interest only.

M. J. H. Nightingale & Co. Limited 27/28 Lovat Lane London EC3R 8EB

capitalisatio	п Сотрапу -	Price	on week	div.(p)) %	Actual	taxed				
1,283	Ass. Brit. Ind. CULS	129	-1	10.0	7.8	<u> </u>	_				
4,226	Airaptung	73		4.7	6.4	11.6	16.0				
7,100	Armitage & Rhodes	- 44	-1	4.3	9.8	3.7	8.3				
12,159	Bardon Hill	199	-2	9.7	4.9		11.8				
1,325	CCL 11:0% Conv. Pref.	106	-1	15.7	14.8						
4,720	Deborah Services	61	-1.	6.0		. 3.0	5.7				
3,984	Frank Horsell	125	_	6.4	5.1	11,3	23.1				
11,124	Frederick Parker	.77	. +1	64	8.3	3.9	7.5				
996	George Blair	54	_	· -		-	7.5				
3,899	Ind. Prec. Castings	96	-1	7.3	76	6.9	10,4				
2,592	lais Conv. Prel	108	-1		14.5						
2,454	Jackson Group	97		7.0	7.2	3.1	6.9				
15,872	James Burrough	115	_	8.7	7.5		10.6				
2,468	Robert Jenkins	242	-2	31.3	12.9		3.6				
3,180	Scruttons "A"	63	-1	5.3			9.0				
3,881	Torday & Carlisle	159		70.7			9.5				
2,883	Twintock Ord,	131	, -1,		u.,		9.5				
2,184	Twinlock 15% ULS	80		15.0							
3.815	Undock Holdings	25		3.0	12.0		7.6				
10,013.	Walter Alexander	79		6.4							
5,368	W. S. Yeates	230		14.5		6.0					
•						. 4.4.					
Prices now available on Prestel page 48146.											

hecome unconditional in all interim dividend of 0.5p net (nil) respects. The offers remain open for acceptance until further year a single payout of 1p was Reference Agent

> Last year was very tough. Just look how many of the world's important economies were in recession.

Yet it was the 15th successive year of growth in sales, profits and earnings for BTR.

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U.S.5200,000,000 Guaranteed Floating Rate Notes Repayable at the Option of the Holder at Par Commencing October 1982 Citicorp Overseas Finance

The benefit of expenditure on £7,000 on the disposal of a former

The directors say that during ment is expected to make

Corporation N.V.

(Incorporated with limited liability in the Netherlands Antilles) Unconditionally Guaranteed by

CITICORP •

In accordance with the terms and conditions of the above-mentioned Notes and Agent Bank Agreement dated as of April 3, 1980 between Citicorp Overseas Finance Corporation N.V., and Citibank, N.A., notice is hereby given that the Rate of Interest has been fixed at 15½% per annum and that the interest payable on the relevant Interest Payment Date, July 13, 1982 against Coupon No. 9 in respect of U.S.510,000 nominal of the Notes will be

By: Citibank, N.A., London, Agent Bank April 13, 1982

The Industrial Bank of Japan Finance Company N.V.

U.S.\$50,000,000 Guaranteed Floating Rate Notes Due 1988



provisions of the Reference Agency Agreement between The Industrial Bank of Japan Finance Company N.V., The Industrial Bank of Japan Limited and Citibank, N.A., dated October 6, 1980, notice is hereby given that the Rate of Interest has been fixed at 15½% p.a. and that the interest payable on the relevant interest Payment Date, October 13, 1982, against Coupon No. 4 will be U.S.\$800.63.

April 13, 1982 By: Citibank, N.A., London, Reference Agent CITIBANCO

The Industrial Bank of Japan, Limited **London Floating Rate Certificates of Deposit**

\$10,000,000 due October 15th 1984

For the six months April 13th 1982 to October 13th 1982 the C.D.'s will bear an interest rate of 153/4% per annum.

Samuel Montagu & Co. Limited

FINANCE FOR INDUSTRY TERM DEPOSITS.

Deposits of £1.000-£50,000 accepted for fixed terms of 3-10 years.

Interest paid gross, half-yearly. Rates for deposits received not later than 131 131 131 131 131 131

Deposits to and further information from The Treasurer, Finance for Industry plc, 91 Waterloo Rd., London SE1 8XP (01-928 9822, Ext. 367). Cheques payable to "Bank of England, a'c FFI" FFI is the holding company for ICFC and FCL.

Argentina fails to meet deadline

THE FIRST impact of Argen-tina's decision to block payments in Chile, Peru and Ecuaments to British banks emerged dor. The latter's finance minist the end of last week when the will be in London this week its central bank told Chase Man- to drum up support for a large hattan's London subsidiary that credit to help the country's it would not meet a payment private sector through the deadline on a \$50m revolving effects of devaluation. credit arranged last autumn for

involved in the deal said they reach, received a telex from Chase informing them of the problem. The syndicate involves a range of North American, European and Arab banks

Argentina appears technic Easter.
ally to have broken the terms Irelan of the loan by refusing to meet the payment deadline, But bankers said that the syndicate was unlikely to take any action as the payment concerned involved a repayment of principal which would have immediately and central banks. been redrawn under the loan's revolving nature.

liferate, however, concern con- writers will receive a i per tinues about the legal standing cent underwriting fee. of Argentine loans in the Ireland has made consider-Euromarket. Few bankers able progress with this year's predict any formal declarations foreign borrowing programme. of default, but most agreed at the end of last week that the IIIbn out of a total requiremarket has become so nervous ment of III.35bn. As a result, as to stifle any further efforts

A meeting is due later this credit for Segba, the Buenes have been put in abevance.

easy for Argentina to retrieve option to provide funds at a its international credit rating margin over prime rate. arnce the Falklands crisis is In Eastern Europe, discus-over? Second would the credit sions between Yugoslavia and armor the Falklands crisis is rating of other Latin American German and French banks on borrowers decline in sympathy? separate bilateral credits are question was that Argentina's any operations do emerge, ability to raise money in the Yugoslavia is expected to ask Euromarkets on favourable U.S., UK, Canadian and terms could be impaired for a Japanese banks for a fresh fong time to come: On the credit, although international second question, bankers said bankers say that the climate for that Argentina's problems Yngoslavia has not improved would not help an already much since plans for a \$400m

OCK\$

Originally Ecuador was sugthe oil drilling company Cia de gesting \$900m for this credit. Perforaciones Rio Colorado. It now seem to have scaled the Chase Manhattan, which is amount down to \$500m, agent for the credit, declined although many bankers say to comment, but other bankers even this figure will be hard to

> With the exception of Ireland, European borrowers who have recently been fairly active were holding back from new business last week ahead of

Ireland is raising a \$150m. seven-year euronote facility through Merrill Lynch. The facility involves the sale of three- or six-month notes on a continuous revolving basis to investors such as corporations

The notes will bear interest at the London interbank bid As similar situations pro-rate for eurodollars, and under-

having already raised almost it will probably be able to avoid by Argentina to raise inter-launching a major syndicated national funds. launching a major syndicated credit this year which had been expected in some quarters.

week on the future of the as ... Korea's Exchange Bank is ex-yet unsigned recent \$200m pected to award a mandate this week for a credit of some \$500m Aires electric utility, while on the basis of a split 1-1 per plans for a \$250m borrowing by cent margin over London inter-Gas el Estado, the gas utility, bank offered rate (Libor). The have been put in abeyance. spreads would be a record low Two further questions were for a Korean borrower, but this being asked in the market as would be mitigated by the fact bankers left for their Easter that, for the first time, Korea holidays. First, would it be is expected to offer lenders an

The consensus on the first reported to be continuing. If rather gloomy general outlook for Lasin America.

Elsewhere in the region banks are already watching with rather plans for a \$200m credit were dropped during the winter.

Peter Montagnon

INTERNATIONAL BONDS

IBM syndrome strikes again

THE IBM syndrome struck the Eurodollar market again last week, and a number of U.S. corporations found themselves able to borrow money from Swiss investors with bonds yielding less than U.S. Treasury paper.

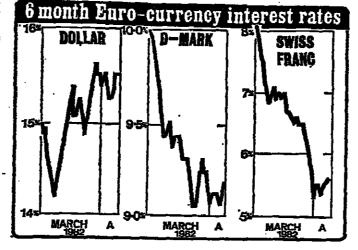
The syndrome in question is the phenomenon whereby famous U.S. companies team up with aggressive European new issue managers and play upon the sometimes insatiable appetite of Swiss investors for easily recognisable U.S. corporate names.

While the secondary market was sluggish last week the new issues sector was buzzing. A total of \$535m of new fixedinterest Eurodollar bonds were launched in the four days be-fore the Easter weekend.

Among the U.S. borrowers cashing in on funds which were clearly cheaper than in the States were Campbell Soup and Getty Oil. American Express, although not such a premier name, also joined in the fun borrowed cheaply in Europe.

How does the IBM syndrome work in action? A Campbell Soup issue is brought to market with an aggressive 14 per cent coupon. The issue is only \$50m so it is not going to be a large amount to move anyway. And before you can say ministrone or chicken stockpot, the Campbell Scup is being ladled up in Zurich's Bahnhofstrasse.

The name-conscious Swiss investors are out in force. Yet the more sophisticated instituthe more sophisticated institu- Perhaps there is a fair tional investors elsewhere are degree of sense in the argument



Thursday, the U.S. 141 per cent 1989 Treasury bonds were yielding 14.79 per cent on an annual basis. The Campbell Soup issue or the Getty Oil 14 per cent issue, at a price of 99, yielded 14.10 per cent.

In the secondary market the Eurodollar sector closed last week on a decidedly sluggish note. The bond markets on both sides of the Atlantic are once again talking about the expected bulge in U.S. M-1 money supply figures. There is little logic in this fear of a money supply bulge—it happens every April—but that does not alter the reality of the concern.

not going to prefer such a paper, against the publication of kets the World Bank is launch-even from top quality U.S. cor-even from top quality U.S. cor-porations, if they can get a figures: the statistics are diffi-

bonds. cult to rely upon, they have a sometimes disproportionate impact on financial markets and they only increase the U.S. bond market's volatility.

Volatility is the word for the sterling bond sector these days. As the Falkland Islands crisis becomes more serious, the previously buoyant bulldog bond market has lost its confidence.

Bulldog bonds - domestic sterling issues by foreign bor-rowers—follow the fortunes of UK giks. The gilt market lost three points last week and the buildog sector lost between two and three points. Whereas the underlying tone had been healthy before the crisis and interest rates were headed downward, uncertainty now per-

vades this market. recc In the Japanese capital mar- par.

8 per cent. The samurai bond market—the domestic yen bond sector for foreign borrowers saw prices rise by about I point last week, roughly the same amount as in the Euro-yen bond market. The reason for the slight increase is the view some investors are taking of an appreciation in the Japanese currency from its present low

هكذامن الأصل

The Japanese government bond market had a less happy week as the Bank of Japan tried to nudge interest rates higher to protect the yen. The benchmark 1988 6.1 per cent paper closed the week unchanged and the 1989 7.7 per cent paper weakened by a point.

In the Continental Eurobond markets, the Euro D-mark secor closed the week ? point higher, while the Swiss franc-foreign bond market was } point stronger by Thursday.

The Inter-American Developbank brought out a DM 150m 10-year issue at 9 per cent, priced at 99½ to yield 9.08 per cent. The paper was changing hands on Thursday at about its issue price, a good

The West German Capital Market Sub-committee meets this week to set the next calendar for the foreign bond sector. 9.08 per cent, The paper was about DM 1bn a month of new issues.

In Switzerland the falling inflation rate is encouraging the bond market, and a number of

Alan Friedman feet that people prefer to keep their money in savings accounts

U.S. BONDS

Thin outlook as prices drift down

WITH LUCK, trading on Wall and money market funds these Street will not be blotted out days (where it gets included in by another blizzard this week. the money supply) rather than But in other respects, the credit in investments (where it does markets are expected to be not). much the same — thin and hesi-

Bond prices drifted a little ower last week, and short-term interest rates were mixed. Most striking was the decline of the Fed Funds rates from the unnaturally high levels it reached during the end-of-quarter rading at the turn of the nonth.

Sentiment was still domi-dated by worries about the money supply, which analysis had warned would rise sharply as people liquidated investments in advance of the April 15 tax payment deadline. The comparatively low increase announced by the Federal Reserve Board last Friday (M1 was up \$900m) showed that analysis had got the direction right, if not the size of the change. The biggest surge is expected in the next forinight, however, when the Fed announces the figures for

the weeks ending April 7 and 14. Unless the bulge is truly massive, however, the Fed has the option to sit tight as it did during the bulge in the first quarter of this year. Despite last Friday's rise, M1 is still only slightly above target, and its general movement since

January has been downward. The Fed also revealed in the recently released Minutes of its February policy meeting that it might broaden or mise M-1's turget range to allow for the to \$445 6bn

This "liquidity preference" has already been blamed by top Fed officials for much of the volatility in the money supply in recent months. The Fed is also considering this week whether to change the current weekly money supply announcement and do away with what has come to be known as the Friday afternoon "crap shoot." Wall Street's other big worry, the Federal budget deficit, brought some good and bad

Reports from Washington suggested that Congress and the White House may have moved closer to a compromise on the Budget in secret talks.

On the other hand, the White House raised its forecast for this year's deficit by \$25n to \$100.55n and next year's by

The trouble is that even the increased figures fall tens of deficit estimates that are doing the rounds on Wall Street and are being discounted in the credit markets.

U.S. INTEREST	RATES ((**)
	West to	o Week t
	April 8	April 2
Fed funds wkly, av.	14 29	
3-month Treas, bills	13.15	13 70
3-month CD	14 70	14 75
30-yeer Trees, bonds	13 65	13 58
AAA Util	16 73	16 00
AA Industrial	15 50	15.37
Source: Salamon Bra		
In the week to March		

David Lascelles

CURRENT INTERNATIONAL BOND ISSUES

Borrowers	Amount m.	Maturity	Av. life years	Coupon %	Price	Lead manager O	ffer yield %
U.S. DOLLARS	:						
S. Carolina Elec. and Gast	60	1989	7	15 }	99 Į	Kiddey Peabody nid.	15.620
Campbell Soup‡	200	1992	19	G.	27	CSFB, Morgan Grnty,	14,000
Campbell Soup‡	50	1 989	7	14	T00	CSFB, Morgan Gmty,	14,000
Aetna Life‡	150	19 9 7	15	15	100	Morgan Stanley	15,000
Ennia‡	60	1987	5	15]	100	Amro Intl.' Morgan Stanley	15.500
Hertz‡	50	1989	7	152	100	Salomon Bros., Lehma Bros. Kuhn Loeb	
CIT	50	1987	5	īS <u>i</u>	•	Dillon Read, Salomon Bros.	•
SNCF(¶‡	125	1988	6	5 <u>1</u> ¢	100	Morgan Guaranty, Societe Generale	5.2500
Getty Oil‡	TDO	1989	7	14	100	CSFB	14.000

Amount m.	Maturity	years	Combou	Price	Lead manager	Offer yiel
		- -		-		
75	1989	7	14 }	100	Morgan Stanley, She	
65	1987	5	14}	100	Blyth Eastman Paine Webber	14.250 14.625
20	1987	5	163	100	Banque Intl. à Lux.	16.750
						
750	1992	10	9	99 Į	Deutsche Bank	9.080
						
80	1992	~	73	100	CZ	7.750
		-		•		•
50	1987		73	100	CS	7.250
30bn	1994	12	8	99}	Daiwa Secs.	8.040
	75 65 20 150 80 100 50	m. Maturity 75 1989 65 1987 20 1987 150 1992 80 1992 100 1992 50 1987	m. Maturity years 75 1989 7 65 1987 5 20 1987 5 150 1992 10 80 1992 — 100 1992 — 50 1987 —	m. Maturity years % 75 1989 7 14\{ 65 1987 5 14\{ 20 1987 5 16\{ 20 1987 5 16\} 150 1992 10 9 80 1992 - 7\{ 100 1992 - 6\{ 50 1987 - 7\{ 20	m. Maturity years % Price 75 1989 7 14½ 100 65 1987 5 14½ 100 20 1987 5 16½ 100 150 1992 10 9 99½ 80 1992 — 7½ 100 100 1992 — 6½ 4 50 1987 — 17½ 100	m. Maturity years % Price 75 1989 7 14\(\frac{1}{4}\) 100 Morgan Stanley, She Amex Intl. 65 1987 5 14\(\frac{1}{4}\) 100 Blyth Eastman Paint Webber 20 1987 5 16\(\frac{1}{4}\) 100 Banque Intl. \(\frac{1}{4}\) Lux. 150 1992 10 9 99\(\frac{1}{4}\) Deutsche Bank 80 1992 - 7\(\frac{1}{4}\) 100 CS 100 1992 - 6\(\frac{1}{4}\) * SBC 50 1987 - 17\(\frac{1}{4}\) 100 CS

This announcement appears as a matter of record only هذا الاعلان يظهر للتدوين فقط

FUERZAS ELECTRICAS DE CATALUNA, S.A. (FECSA) (فكسه شركة فورزاس الكتريكاس الكاتلونية ، ش.م. (CATALONIA — SPAIN)

> كاتلونية ــ اسبانيا US\$ 40.000.000

۰ ۰ ۰ ۰ ر ۰ ۰ ر ۰ لا دولار امریکی MEDIUM TERM LOAN

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ARAB BANKING CORPORATION (ABC)

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بنك الاندوشين والسويس

Co-managed by

EUROPEAN ARAB BANK(MIDDLE EAST) E.C. LYBIAN ARAB FOREIGN BANK

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UBAN-ARAB JAPANESE FINANCE LIMITED

ARAB TRUST COMPANY K.S.C.

المدراء المساعدون

البنك العربي ــ الاوروبي (الشرق الأوسط) E.C. المصرف العربي ــ الليبي للتجارة الخارجية

البنك الوطني الكويتي ش.م.ك. المؤسسة العربية المصرفية بنك الاندوشين والسويس البنك العربي ــ الاوروبي (الشرق الأوسط) E.C. المصرف العربي الليبي للتجارة الخارجية شركة أبو ظبى للاستثمار البنك العربي ألفرنسي للأستثمارات الدولية الشركة الكويتية للتجارة والمقاولات (ش.م.ك)

يوباف ــ المصرف العربي ــ الاميركي البنك الأهلي الكويتي شركة الائتمان العربية بنك الكويت الصناعي يوبان ـ الشركة المألية العربية البابانية المحدودة

الوكيل Agent ARAB BANKING CORP.(ABC) المؤسسة العربية المصرفية



U.S. \$50,000,000

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131/1% Notes due September 30, 1984 with Warrants to purchase U.S. \$150,000,000 Zero Coupon Debentures due March 31, 1990

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Fluor Corporation

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Kuwait Investment Company (S.A.K.)

Swiss Bank Corporation International

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YAMAICHI INTERNATIONAL (EUROPE) LIMITED

S.G. WARBURG & Co. LTD.

April 6, 1982

der the Securities Act of 1933 and may not be offered or sold in, or ed States. This announcement advence as a matter of according to

BY CHARLES SMITH, FAR EAST EDITOR, IN TOKYO

MITSUI AND COMPANY, the Japanese newspapers Japanese trading company involved in the loss-making retire from the chairmanship to Bandar Khomeini petrockemical project in Iran, announced Iranian debacle. yesterday that five executives of director level and above, as and his colleagues will be well as the company's standing formally decided at shareauditor, will retire in June.

The list includes the chairman, Mr Yoshizo Ikeda, but not Mitsui's president Mr loshikuni Yahiro. Mr Yahiro will stay on as chief executive to handle the problems of extricating the from Bandar Khomeini.

Mitsui said last night that the Iranian problem might have some connection" with the retirements, but "normal personnel changes" were also

Some weeks before yester the current vice-president Mr day's formal announcement, Masaru Uchida.

take responsibility for

The resignations of Mr Ikeda holders' meeting in June. The same meeting will approve a decision by the company to set aside Y40bn (\$160.9m) as special reserve to cover losses on the Bandar Khomeini project and to reduce the dividend. As a result of the reserve fund allocation, Mitsui is almost certain to show a loss on its 1981 business results, the com-

pany said yesterday. Mr Yoshizo Ikeda became chairman' of Mitsui in 1979, after acting as president. His successor as chairman will be

Hongkong & Shanghai banks in joint venture

WARDLEY and Marine Midland is trying to harness Banks, both part of the Hong-kong and Shanghai Banking Antony Gibbs, the group's Corporation, are to establish a London merchant bank, will London investment management operation to service the rapidly growing foreign investment needs of U.S. pension funds.

The operation is understood to be the first joint venture between Wardley, a Hong Kong merchant bank and Marine Midland, a large U.S. commercial bank in which Hongkong and Shanghai holds a majority

Traditionally, the various parts of the Hongkong and Shanghai Banking empire have worked independently of each other: the new venture is one will begin operations probably of the first signs that the group by the middle of the year.

Antony Gibbs, the group's have a small stake in the new operation, which is expected to be called Wardley Marine International Investment Management. Wardley manages over \$2bn of funds in the Far East. Mr Steven Swift, an executive with Wardley Investment Services, has been posted to

London to run the operation. Wardley Marine Interna-tional will register with the U.S. Securities and Exchange Commission for permission to manage U.S. pension fund investments. Once this is granted, it

Modest increase by BHF Bank

BERLINER HANDELS und interest rose 14.5 per cent to Frankfurter Bank (BHF Bank) DM 153m last year from announced a rise in 1981 net DM 133.9m. The dividend is earnings to DM 26.3m being held at DM 9 per share. (\$10.86m) from DM 25.3m in (\$10.86m) from DM 25.3m in As for 1982, this is seen as a 1980, our Financial Staff writes. year of increasing credit risks. 980, our Financial Staff writes. Year of increasing credit risks. FINANCIAL EXECUTIVES Presenting the bank's results, a forecast that has prompted institute. New York, an iter Christian Schroeder the bank to expand its risk organisation of more than 12,000 Herr Christian Schroeder-Hohenwarth, co-chairman, said reserves for foreign loans that better operating earnings substantially. with lower refinancing costs were given priority over net

BHF's non-guaranteed credit exposure in Poland totals which rose only 1.1 per DM 25m. Overall risk reserves FRENCH BONDS

Foreign investors steer clear of Paris issues

FOR THOSE with a fondness Of the FFr 103bn (\$16.4bm) of upsurge this year because of happily absorbing since have pressure from the authorities to for such details, today is somenew issues last year, foreigners the substantial financing needs accounted for about two thirds give first preference to subscribting of a landmark in the (mainly Arab institutions) are of the Governmen tand the pubof this and have had a limited ing to a government backed loan development of French capital markets. Holders of shares in the newly nationalised banks industrial groups are required to exchange them for Foreigners have also been heavy state issued compensation sellers of the FFr 7bn to bonds, and the new bonds FFr 8bn shares of the newly become tradeable on the second-

The swap thus brings down the curtain on the final act of France's nationalisation drama. The equity market, deprived of some of its most prestigious names, is left in the shadows, and the bond market becomes the major source of long-term capital.

By international standards France's bond market still remains small and has not attracted much foreign interest.

reckoned to have taken up only 10-15 per cent. Fears of a franc devaluation have been pushing foreigners out of the marker. nationalised companies and banks that changed hands last month before they ceased to be

pressure on the franc. The bond market, in contrast, has been growing rapidly. New issues rose by 70 per cent in 1980 to FFr 107bn as a result of the policy of M Raymond Barre, the former Prime Minister, to drive savings into longer term instruments. They stabilised last year, but the market

has been expecting a renewed

quoted on the bourse - selling

which contributed to the rising

lic sector.

Brokers talk eagerly of the possibility of FFr 130bn-300bn of new issues in 1982. The planned budget deficit is up over 35 per cent to FFr 95bn and the realised deficit is expected to be closer to for investors to term deposit FFr 120bn. Moreover, the accounts. newly nationalised banks and industrial groups can no longer

holding. Their additional invest- faith that interest rates will ment requirements are likely to be large

But the rhythm of new issues last year with a total so far of

Borrowing has been largely sustained by the newly established "Fonds Communes," a type of unit trust set up by banks and money market dealers to provide an alternative

But new fixed rate issues currently carrying a compon of look to the equity markets to 16.90 per cent on public sector raise fresh capital because this notes have generally had a poor would dilute their state share-reception. The market has no come down as the Government

Traditionally, this time of the has so far been no faster than year is a period of slack trading for the bond market. At the about FFr 30bn. Floating rate same time, major investors, like notes which the market first insurance companies and pentook up in 1979 and has been slons funds, have been under

to plug the deficit in the unemployment benefit fund.

In this relatively unfavourable climate, the government has held back from launching the new state loan that had been expected. The Ministry of Finance, it had been thought, had been hoping to market this with a 15 per cent coupon as compared with the 16.20 per cent on the FFT 8bn state loan raised in January. But with the bank of France's day-to-day money market rate still being held at 17 per cent in defence of the franc this remains un-

realistic, at the moment. The key question hanging over the market this year is whether the Government, faced with the enormous public sector financing requirement, will

a member of the board for personal reasons. Mr Abe

president until the company

completes the sale of its WTFN

stock to H. B. Radio of New York, after which it is expected

Mr William James, new execu-

tive vice president, mining, for Noranda Mines, will become president and chief operating

officer of FALCONBRIDGE NICKEL MINES on April 20 when Mr H. T. (Pete) Berry

steps down from these two posi-tions. Mr Berry, who is expected to retire at the end of

this year, remains as chairman

James, one of Canada's top mining executives, is the first of

the Noranda insider group to leave since control of that com-

pany was acquired by BRAS-CADE RESOURCES.

NATOMAS COMPANY has appointed Mr William Jaeger

and control-for Natomas Coal

• H. J. HEINZ COMPANY Pittsburgh, has expanded its

board of directors to 18 me

president-administration

and chief executive officer.

that the Swanton Corp.

insurance companies, and other institutional investors, over which nationalisation has given it an increasingly strong influence to take up issues at leaser rates than would normally be

accentable. The risk of this is that the French market would become increasingly dirigists and carted

from international trends. Meanwhile for French investors, the "compensation" bonds of which the capital is repayable over 15 years and which on issue carry a coupon of 16.64 per cent, are attractive The current average yield of state bonds is 16.10 per cent. For foreigners, the first preoccupation will continue to be the size and timing of the part French devaluation.

David Housego

New chief for Midland Bank Canada

● Mr Jack H. B. Nederpelt has been elected president, chief executive officer and member of the board of directors of MID-LAND BANK CANADA. Toronto. the wholly-owned subsidiary of Midland Bank. He succeeds Mr Dennis G. Sherwood, who is retiring

● Mr Richard D. Alman has been elected a vice-president of the WESTERN UNION TELEGRAPH COMPANY, principal subsidiary of Western Union Corporation. will be primarily responsible for the company's priority mail services, which include commercial applications of Mailgram message service, Western Union Computer Letter Service, and the operations of Western Union Electronic Mail. Incorporated. Mr Howard E. Tyrrell has been named director-corporate risk management for KANEB, Houston. He was vice-president

of risk management with Charter Oil Company, Jacksonville.

At the AMERICAN IRON Janet Nash has been appointed as director, statistics.

senior financial officers representing over 6,000 companies, has elected Mr Charles R. Allen. chairman of the board and Mr John F. Ruffle, vice-chairman. cent to DM 9 09bn after a 9 per are currently at the highest Both will serve a one-year term ent growth in 1980. level, since 1970 and are six commencing July 1. Frank S. Owen to new positions plans. Upon my retirement on Texas. working on special corporate BHF Bank's earnings on times as high as the 1980 figure. Mr Eric D. Saunders has been as associate directors of June 1, Mr Probst will become FRIENDLY FROST INC. projects.

elected vice-president operations SEARS MERCHANDISE GROUP, Chicago. He succeeds Mr Charles F. Moran, who has been elected vice-president-corporate planning for the company.

• AM INTERNATIONAL, INC., Chicago, has appointed Mr James A. Putlak, Jr, as division vicepresident and controller of the company's multigraphics division. THE STANDARD OIL COM-PANY (OHIO) has nominated. Mr Roger Beron for election to the Sonio board of directors, He is managing director of The British Petroleum Company, and will replace Mr Peter L Walters,

Mr Chris Walsh has been appointed managing director of ELF PETROLEUM (GB) and Elf Oil (GB) the refining and distribution affiliates of the Elf Aquitaine Group in the UK. He replaces Mr Hubert Lutz who will become chief executive of Elf's refining and distribution sector in Germany. Mr Lutz will be replaced as chairman of Elf (GB) by Mr Jean Brunel, who is the European refining and distribution manager for the Elf Aquitaine Group in Paris.

 Mr Reto Jenatsch has been appointed general manager of Universal Engineering and Finance Corporation, Geneva, a subsidiary of Universal Engineering Corporation, Berne, and of the Swiss Bank Corporation. He was a member of the executive committee of Losinger. Dr Heinz Egli remains delegate the board of directors of UNEFICO.

UNITED TECHNOLOGIES CENTRE, East Hartford, Conn., has appointed

INTERNATIONAL APPOINTMENTS

research. Dr. Edward A. Sziklas has become assistant director of Mr Gerald G. Probst, former president of Sperry Univac, has been elected chief executive officer of SPERRY CORP. Mr Proost, who is president of the



Mr Gerald G. Probst

additional responsibility immediately. Mr J. Paul Lyet, chairman of the board, said: "In amicipation of my retirement from Sperry this year, the board of directors planned an orderly top management transition in 1979 with the establishment of the office of the chairman. Mr Probst has been a key member of the office, with direct responsibility for the corporation's five operating divisions and the Sperry Research Centre. My relinquishing of the post of chief executive officer is a further step to assure the continuity of product management for the

chairman of the board as well as chief executive officer of Sperry."

WARBURG **PARIBAS** BECKER-A. G. BECKER, New York, has appointed Mr Michael

J. Rolland as a madirector in New York managing Rolland's responsibilities include mergers and acquisitions and peral corporate finance for • Mr Ron Geddes has been

appointed managing director of PROTECH INTERNATIONAL (SINGAPORE). He succeeds Mr Richard Crockford who is returning to the UK.

• Mr G. J. Maier has been appointed to the board of BOW VALLEY INDUSTRIES, Calgary, as president and chief operation officer. He recently resigned as chairman of Hudson's Bay Oil and Gas Company. Mr D. K. Seaman, chairman and chief executive officer of Bow Valley will relinquish to Mr Maier the responsibilities of chief executive officer following the annual meeting in May, Mr Seeman, who founded the Bow Valley organisations over 30 years ago, will remain as chairman.

● Mr Andrew G. Genor has been appointed vice president, finance and administration, at HONEY-WELL EUROPE SA, Brussels. He was treasurer of Honeywell

● Mr Ned Fowler has been named president of the Ideco named president of the Ideco bers with the addition of Mr division of DRESSER INDUS-Richard B. Patton, who also was TRIES, INC., succeeding Mr named a senior vice president Nick Klist, who left Ideco to of the company. Mr Patton has accept a promotion with served the last two years as an Dresser's compressor group. Mr Fowler was vice-president of responsibility for the Heinz product management for the Canada, Hubinger and Weight Mr George F. Hausmann and Mr dur management and of our Ideco division in Beaumont, Watchers subsidiaries

area director of Heinz with

Company.

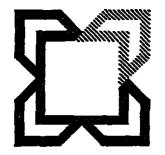
states that Mr Daniel Schmier Mr Lars Wessian, SKANDA has resigned as president and as INSURANCE CO. deputy chief executive of the European mine and manager for the inter-national marine and aviation Chapnik has become interim division, will from July become deputy Zone. He will be based in House Kong and be responsible by taking control of Friendly Frost. In addition to the presidency. Skandia's operations in the Boag Kong and Japan regions. In Lars-Olof Nordström has in-Mr Chapnik will continue as ceeded Mr Wesslau as division

Mr Andrew W. Donnelly, vice president and managing director of European operations based in of the RALSTON PURINA CO., will be leaving to head the international opera-tions of the ALBERTO COLVER dent international from Mer Mr Glenn E. Periston has been elected a vice president of GOULD INC., in addition to his position as chairman of the board and chief executive officer of its subsidiary American Microsystems, Inc. (AMI).

Mr David T. Jehnston, seniavice president and directar of E. F. Hutton & Co., Inc., has been re-elected chairman of the board of governors of COMMO DITY EXCHANGE. INC. (COMEX). Mr Irving Redel was re-elected treasurer of the Exchange

TEXASGULF INC. has elected Mr Albin Chalandon and Mr André Tarallo to its houd Mr Chalandon is chairman and chief executive officer of Societé Nationale Elf Aquitable (SNEA), while Mr Tarallo h senior vice president of SNEA's foreign operations division. El Aquitaine is the parent company

New issue. These securities having been sold, this announcement appears as a matter of record only. April 1982.



Development Bank of the Philippines

(Incorporated in the Republic of the Philippines)

U.S.\$30,000,000

Guaranteed Floating Rate Notes due 1990

Guaranteed by

The Republic of the Philippines

Lloyds Bank International Limited

Fuji International Finance Limited

Allied Banking Corporation

Ayala International Finance Limited .

Credit Lyonnais Hong Kong (Finance) Limited

London & Continental Bankers Limited

LTCBInternationalLimited

Philippine Commercial and Industrial Bank

Standard Chartered Merchant Bank Limited PNB International Finance Limited

FT INTERNATIONAL BOND SERVICE

YEN STRAIGHTS Issued Bid Offer day week Yield Asian Dev. Bk. 8% 91... 15 100% 101% +0% +0% 2.09 int-Amer. Dev. 8% 91 15 101% 102% 0 -0% 2.53 Japan Airlines 7% 87 ... 9 97% 97% 0 0 8.48 New Zaaland 8% 87 ... 15 100% 101% 0 0 3.09 World Bank 8% 92 20 100 100% 0 0 8.31

OTHER STRAIGHTS Issued Montreal 17 89 CS 50 Nt. Bk. Can. 187, 88 CS 50 Nt. Bk. Can. 187, 88 CS 50 Pancenedisn 187, 89 CS 50 Queb. Hydro 187, 89 CS 50 Queb. Hydro 187, 86 CS 20 Tordom Cpn. 167, 88 CS 25 Transaltz 17 89 CS 50 U. Bk. Nwy. 37, 90 EUA 18 Algamene Bk. 107, 85 Fl 40 Amre Bank 12 86 Fl 50 OKB 14 86 FFr 50 OKB 14 86 FFr 50 OKB 14 86 FFr 50 OKB 14 85 Fl 50 OKB 14 85 OKB 14 85 Fl 50 OKB 14 85 OK

Toronto Domin'n 54 92 04 994 997 11/8 164, Average price changes... On day 0 on week +01, CONVERTIBLE Crv. Crv. Crv. Bid Offer day 1 Ainomoto 54 95 ... 4/81 23.12 974 99 +154 1 Bridgestone Tire 54 96 3/82 476 123.12 974 99 +154 1 Bridgestone Tire 54 96 3/82 476 129 129 99 +154 1 Per 1 Pe

EUROBOND TURNOVER

(nominal value in Sm) Last week..... Previous week 5,792.8 7,7649

Previous week 1,416.0 † Figures net available

> * No information available † Only one market maker supplied a price.

is the yield to redemption of the mid-price; the amount issued is in millions of currency units except for Yen bonds where it is in billions. Change of week = Change over price a week

FLOATING RATE NOTES. Denominated in dollars unless otherwise indicated. Conpon shown is minimum. C.dte=Date next coupon becomes effective offered rate (t three mouth; above mean rate) for U.S.

CONVERTIBLE BONDS: Denominated in dollars inless
otherwise indicated. Che day:
Change on day. Cav. date=First
date for conversion into shares.
Cuv. price = Nominal amount of
bond per share expressed in
currency of share at convenium
rate fixed at issue Perm = Perm = Perm rate fixed at issue. Prem=Per centage premium of the current most recent price of the shares.

The list shows the 200 leter international bonds for which an adequate secondary make exists. The prices over the past week were supplied by Kredietbank NV; Credit Commercial & France Credit Lyappaig. Date France; Credit Loomneis; Commerciant AG; Deutsche Bank AG; Deutsche Bank AG; Westdeutsche Landesbank Girozentrale; Banque Generale Luxembourg SA; Banque Internationale Internationale Luxembourd
Kredietbank Luxembourd Algemene Bank Nederland NV Pierson, Heldring and Pierson Credit Suisse/Swiss Credit Bank Union Bank of Switzerland.
Akroyd and Smithers; Bank of Tokyo International; Bankers
Trust International; Credit Company of the Company of th mercial de France (Securities) London; Citicorp International
Bank; Daiwa Europe NV; Deltes
Securities (UK); EBC; Fist
Chicago; Goldman Sachs International Corporation; Hambre
Bank; IBJ International; Ridden turers Hanover, Merrill Lyns Morgan Stanley Internations Nikko Securities Company (Europe); Orion Royal Bank Samuel Montagu and Co.; See Strauss Turnbull; Sumitor Finance International; S.

Warburg and Co.; Wood Gundf-Closing prices on April

Tokai Kyowa Morgan Grenfell Limited

UK COMPANY NEWS

Chas. Hill improves in second half

in of the it is a second of the in the interest would be reacted from the interest of the inte Interim forecast of an improved second half Charles Hill of Bristol finished 1981 with taxable

Losses per £1 share are stated at 41.7p (2.8p). The dividend is it is to investment earnings that again being missed. The last the group will again be looking distribution was a single payment to offset this decline, says Mr off 2p net in respect of 1978.

Mr Alastair Milne, chief executive, says that 1981 was a significant year with a manual statement.

As reported March 4, group cant year with a majority of the long serving directors standing down to make way for a new

in the company

togan

David Hon

Westan St.

of the Lusbank

Vordströn k

drew W. Denne

· VI REPROS

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LANGE .

takeover by a consortium led by Since the year end the groupering building and property development, ship repairing shipping and transportation—has

disposed of its interests in Bristol Channel Line and acquired Octavius Hunt which makes smoke pesticides and allied pro-ducts, and Cliffords (Bristol) a

property company,
The directors anticipate that
these new companies will make
an increasing contribution to the
group. Various management
changes, reductions in workforce and aggressive marketing policy mare beginning to bear fruit, and barring major setbacks give rise to optimism for the current year,

Mr Milne says.
In 1981 some of the sectors in In 1981 some of the sectors in which the group operates were particularly badly hit by the severe economic conditions, namely Jeffries. Avonmouth and Joseph Fish and Sons.

Thrower for the year was fown from £14.12m to £10.26m.

Tavable losses were struck after

Taxable losses were struck after interest of £54,357 (£33.962). There was a tax credit of £13,444 (£91,485), and after extrain ordinary credits of £82,099 credits of £41,721 (£11,597) and in preference dividends of £13,020 (same) the attributable losses emerged at £406,695 (£41,441).

saf: ASSOC. NEWSPAPERS Associated Newspapers Group Native D has increased its holding in the frame associated Bathurst to about and : 32 15 per cent of the outstanding

GA again looks Slight fall at Wemyss Profit setback to investments

WITH ADVERSE weather conditions in both the UK and the U.S. in the opening months of be avoided," he says, but reasonal Accident Fire assures shareholders that edosses of £530,939, against the year General Accident Fire assures shareholders that effections had increased from anticipates a further deteriorareserved and well placed to withand Life Assurance anticipates a further deterioration in its worldwide underwriting experience during 1982. It is to investment earnings that the group will again be looking may face."

In the UK, Mr Simpson says the group will again be looking the group will again be chairman, the chairman, the chairman rates down to near will encourage will encourage

As reported March 4, group pre-tax profits for 1981 rose nearly 15 per cent from £92.3m to £104.9m, despite underwriting losses almost doubling from £27m to £52.9m—a 31 per cent advance in investment income from £119.3m to £156.9m more than

Total surplus funds for 1981 stood at £557m and the worldwide solvency margin at the year end was 56 per cent, against 59 per cent a year earlier. Retained earnings for 1981 were £45m, which represented 28 per cent of premium growth.

Mr Simpson sees no present signs of alleviation of increasingly competitive underwriting conditions worldwide. "I cannot conditions worldwide. "I cannot business for Yorkshire-General, but express disquiet for the the life specialists of General immediate fatture," he says. "If Accident. Prospects for 1982 have been improved with the economic activity then reckless are competition will be likely to lead to the possibly unpleasant alternative of a reduction in capacity.

Annual meeting in Perth, on May 5 at 11.30 am.

Investment

from £222,000 to £214,000 for the half year to March 31, 1982 and earnings per £1 share were 0.4p lower at 9.5p. The interim dividend, however, is again 7p net and it is intended to maintain the corporation, in which Burnett and Hallamshire acquired a 51 per cent interest last year, has suffered a sharp profit deterioration. in the six months to total at 20p per share.

During the six months, further progress has been made in the restructuring of the portfolio, so as to concentrate on shares with

BOARD MEETINGS

The following companies have notified dates of board moetings to the
Stock Exchangs. Such meetings ere
usually held for the purpose of considering dividends. Official indications are not available as to whether
dividends are interms or finals and
the subdivisions shown below are
based mainly on last year's unetable.
TODAY
Interims: Cedar Investment Trost.
Equity Income Trust, Peters Stores.
Finals: Bank of Scotland. Barton
Group. Dalay Bitumestic, Minet,
Northern Engineering Industries.
FUTURE DATES

ment in the UK during the year was in fixed interest stocks and property, with equity investment confined to sectors with better than average prospects. Equity capital was also provided for a number of small unquoted companies.

In the U.S. new money was invested in the bond market with selective buying into common the charman reports an excel-lent year in relation to new business for Yorkshire-General, the life specialists of General Accident. Prospects for 1982 have been improved with the introduction of new products at

Record Bonus rates have The terminal bonus scale is been declared by the Rayal entrespondingly regioned River and Griental Steam Navigation May 5 Securities Trust of Scotland Spril 21 April 22 Themsen 7-Line Caravans April 28 May 1 Securities Trust of Scotland Spril 28 Securities Trust of Scotland Spril 28 Securities Trust of Scotland April 29 Themsen 7-Line Caravans April 28 April 20 Securities Trust of Scotland Spril 20 Securities Trust of Scotland Spril 21 Securities Trust of Scotland Spril 22 Securities Tru

The reversionary bonus in the Ordinary Branch is lifted 40p to £5.20 per cent of the sum assured and by 30p to £3.50 per cent of the sum assured in the Industrial branch

The company is also consolidating some of the terminal bonus into a special reversionary bonus so that all with-profit policies in both branches, and not just current claims, may not just current claims, may benefit from current investment

The bonus scale varies with

RECORD BONUS rates have The terminal bonus scale is been declared by the Royal correspondingly reduced. But the remaining rates are now increased by an across the board increased by an across the board 52 per cent of the sum assured. On Personal Pension Policies for the self-employed, the guaranteed interest addition is

premium rates down to "near suicidal levels," will encourage even more reckless competition on rates. In the U.S., he sees no

on rates, in the U.S., ne sees no real signs of any upturn in trading conditions.

Mr Simpson reports that a large percentage of new invest-

ment in the UK during the year

WELBECK INV.

Corsec Holdings, a subsidiary of Welbeck Investment, has acquired 85 per cent of Thomas Ryan (Colour Printers) for £159,000 cash.

In addition, Corsec has agreed to acquire the remaining capital in 1985 for a cash consideration stock.

Redemption Notice

City of Oslo (Norway) 9% Sinking Fund External Loan Bonds due May 1, 1985

NOTICE IS HEREBY GIVEN, pursuant to Fiscal Agency Agreement dated as of May 1, 1970 under which the above described Bonds were issued, that Citibank, N.A., Fiscal Agent, has selected by the control of the Sinking Fund, \$1,533,000 principal amount of said Bonds at the Sinking Fund redemption price of 100% of the principal amount thereof, selected by lot for redemption are as follows:

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On May 1, 1982 there will become due and psyable upon each Bond selected for redemption the said redemption price, together with interest accused to the date fixed for redemption. Payment of the redemption price of the Bonds to be redeemed will be made in such coin or correctly of the United States of America as at the time of payment is legal tender for the payment of public and private debts thereon, upon presentation and sumender of said Bonds, with all compons appertaining thereto maturing after the date fixed for redemption, at the Corporate Trust Office of Cathank, N.A., Municipal Bond Processing Window, 20 Enchange Place, 16th Floor, New York, N.Y. 10043 and subject to applicable laws and regulations, at the main offices of Cathank, N.A., in American, Brussels, Frankfurt (Main), London, Milsor and Paris. Payment at the offices of Cathank, N.A. in Europe referred to above will be made by check drawn upon a bank in New York City or by a transfer to a dollar account mainwill be made by check drawn upon a bank in New York City or by a transfer to a dollar account maintained by the payee with a bank in New York City.

On and after the date fixed for redemption interest on said Bonds will cease to accross. Coupons due

May 1, 1982 should be detached from the Bonds and presented for payment in the usual manner.

March 30, 1982.

For the CITY OF OSLO (NORWAY)

CITIBANK, N.A. as Fiscal Agent

Finals:
Aberthaw and Bristoh
Chennel Portland Cement April 15
Ayrahize Matal Products ... April 16
Barrow Hepburn ... April 14
Chennel Comment April 14 Duncan (Walter)

and Goodricke April 14

regource natural Income in the period has been higher than anticipated, owing to the substantial level of liquidity

Gross revenue was marginally lower at £382,000 (£385,000) despite an increase in unfranked income from £156,000 to £162,000. Management expenses took £35,000 (£26,000) and tax accunted for £133,000 (£137,000). At the half year, total assets amounted to £9.85m (£10.21m at September 30, 1981) and net asset value, excluding the interim dividend, was reduced at

General Investors

AFTER-TAX revenue of General Investors and Trustees Invest-ment Trust, increased from £1.1m to £1.23m for the year ended January 31, 1982. Total income amounted to £2.97m, compared with £2.38m.

Stated earnings per 25p share rose by 0.85p to 7.89p and the net dividend total is increased by 10 per cenf to 6.6p (6p) with a final of 4.1p (3.8p). A onefor-one scrip issue is also

proposed. Management expenses interest totalled £990,756 (£628,312); tax took £748,591 (£652,350) and ordinary dividends absorbed £1.02m (£0.92m). Net asset value per share was higher at 243.4p (225.9p) after prior charges at par, and 247.7p (230.6p) after these charegs at market value. Investments were valued at £39.6m (33.6m).

NOTICE TO HOLDERS OF

TOSHIBA CORPORATION (Formerly Tokyo Shibaura Electric Co., Ltd.) (Tokyo Shibaura Denkî Kabushîkî Kaisha) 6% CONVERTIBLE BONDS

REFERENCE IS HEREBY MADE to the Notice of Redemption and Termination of Conversion Rights relating to the above-mentioned Bonds which appeared in this publication on March 25, 1982.

this publication on March 25, 1982. The reported closing prices of the shares of common stock of the Company shown in the last paragraph of such Notice should have been up-dated as follows:
For the information of the Bondholders, the reported closing prices of the shares of common stock of the Company on the Tokyo Stock Exchange during the period from January 22, 1982 to March 17, 1982 ranged from a high of Yen 395 to a ranged from a high of Yen 395 to a low of Yen 293 per share. The reported closing price of such shares on the Tokyo Stock Exchange on March 17, 1982 was Yen 296 per

> TOSHIBA CORPORATION By: The Bank of Tokyo Trust Company as Trustee

Deted: April 13, 1982

ENERGY RESOURCES & SERVICES INCORPORATED

Net Asset Value 31st March 1982 \$6.78 per share (unaudited)

STOCKHOLDERS FAR EAST JAVESTMENTS INC.

Net Asset Value 31st March 1982 \$1.73

per share (unaudited)

THE TRING HALL USM INDEX 118.3 (+0.9) close of business 8/4/82 BASE DATE 10/11/80 100 Tel: 01-638 1591

LADBROKE INDEX Close 560-565 (+1)

at Rand London

mining group, Rand London Corporation, in which Burnett per cent interest last year, has suffered a sharp profit deteriora-tion in the six months to December 31, reports Thomas

Sparks from Johannesburg.
First-half pre-tax operating profits have failen to R 1.14m (£609,000). In addition, management has decided to charge an additional R 3.3m against operations to cover expected adverse costs in the final three months of the present nine-month financial period which ended on March 31 1982.

The company's year-end has been changed to coincide with that of its new British parent.
In the six months ended
December 31 1980, pre-tax
operating profit was R 4.24m and a protax profit of R 4.96m was carned in the year ended June 30 1981.

The company's troubles stem from its coal interests. At the start of 1980, Rand London valued its coal assets, placed them in a newly-formed subsidiary, Rand London Coal. and sold shares in it to share-

The net effect was that shareholders bought their own company. Initial expectations of Rand London Coal failed to materialise and cash constraints chliged the company to

cbliged the company to 1981/82. Dealings in the new revise drastically its planned ordinary shares and new conprogramme of mine openings.

One small anthracite mine, Tuesday.

because of poor market conditions. More importantly, however, it has proved impossible to continue exploiting the Kempslust mine by mechanised methods and it is being converted to hand-got working

at considerable expense.

In addition to the company's mining problems, losses were sustained by the 50 per cent-owned Ghent Coal Company which operates a coal terminal at the Belgian port of Ghent. A major reorganisation of Rand London's operations is in

progress to reduce costs.
In order to provide operating funds a steel merchanting subsidiary has been sold for R 8m resulting in a book loss of

at an extraordinary meeting on Thursday. The meeting approved the £30m package to finance the acquisition including a rights issue of £1.6m shares and £3.85m Letters were sent out with details of provisional allotment

la Tamise S.A. 1310 Barclays Bank 13 % Beneficial Trust Ltd 14 % Bremar Holdings Ltd 14 % Brit. Bank of Mid. East 13 co

OUTENS MOAT

Shareholders of Queens Moat Houses, the botel group, approved the acquisition of 26 hotels from Grand Metropolitan,

to ordinary shareholders and the holders of 104 per cent convertible unsecured loan stock

BASE LENDING RATES

A.B.N. Bank 13 %
Allied Irish Bank 13 %
American Express Bk. 13 %
Amro Bank 13 %
Henry Ansbacher 13 %
Arbuthnot Latham 13 %
Associates Cap. Corp. 13 %
Banco de Bilbao 13 %
BCCI 13 %
Bank Hapoalim BM 13 %
Bank Leumi (UK) pic 13 %
Bank of Cyprus 13 %
Bank of Cyprus 13 %
Bank Street Sec. Ltd. 14 %
Bank of N.S.W. 13 %
Banque Belge Ltd. 13 %
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National Westminster 13 %
Norwich General Trust 13 %
P. S. Refson & Co. 13 %
Roxburghe Guarantee 13; %
E. S. Schwab 13 %
Slavenburg's Bank 13 %
Standard Chartered 13 %
Trade Dev. Bank 13 % Canada Perm't Trust... 133 % Castle Court Trust Ltd. 131 % Cavendish G'ty T'st Ltd. 151 % 13 % Trustee Savings Bank 13 TCB Ltd. 13 % United Sank of Kuwait 13 % Cedar Holdings 13 %
Charterhouse Japhet 13 %
Choulartous 131%
Citibank Savings 5124%
Clydesdale Bank 13 %
C. E. Coates 14 % Whiteaway Laidlaw ... 13 c. Williams & Glyn's 13 c. Wintrust Secs. Ltd. ... Members of the Accepting C. E. Coates 14 % Consolidated Credits... 13 % 7-day deposits 10%, 1-month 10.25%, Short term £9,000-12 month 12 6%. Co-operative Bank 13 %
Co-operative Bank 13 %
Coronthian Secs. 13 %
The Cyprus Popular Bk. 13 %
Duncan Lawrie 13 %
Eagil Trust 13 %
E.T. Trust 13 %
Exeter Trust Ltd. 14 %
First Nat. Fin. Corp. 15 %
First Nat. Secs. Ltd. 15 %
Robert Fraser 14 % 7-day deposits on sums cf. under £10,000 10¹4°. £10,000 up to £50,000 11°., £50,000 and over 21-day deposits over \$1,000 1141,

LOCAL AUTHORITY BOND TABLE

Martgage base rate.

Authority (telephone number in parentheses)	Annual gross interest	Interes pay- able	Minimum Sum	Life of hond	
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This advertisement complies with the requirements of the Council of The Stock Exchange.

U.S. \$50,000,000

Transco International N.V.

151/2% Guaranteed Notes Due 1987 With Warrants to Purchase U.S. \$100,000,000 151/4% Guaranteed Notes Due 1987

> Unconditionally guaranteed as to payment of principal, premium (if any) and interest by



Transco Companies, Inc.

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Merrill Lynch International & Co.

Lazard Frères & Co.

Banque Bruxelles Lambert S.A.

Manufacturers Hanover Limited

J. Henry Schroder Wagg & Co.

Swiss Bank Corporation International

Union Bank of Switzerland (Securities) Limited

The U.S. \$50,000,000 151 ° Guaranteed Notes Due 1987, issued at 100 per cent., the Warrants and the U.S. \$100,000,000 151% Guaranteed Notes Due 1987 to be issued upon exercise of the Warrants have been admitted to the Official List of The Stock Exchange, subject, in each case, only to their issue. Each Note constituting the initial issue is being issued with two separately transferable Warrants, each entitling the holder thereof to purchase one Note, which will not be issued with Warrants, at 100 per cent. of its principal amount. Interest is payable annually in arrears on 15th April, the first payment being made on 15th April, 1983.

Full particulars of the Notes and the Warrants are available in the Extel Statistical Service and may be obtained during usual business hours up to and including 27th April, 1982 from the brokers to the issue:

> Cazenove & Co., 12 Tokenhouse Yard, London EC2R 7AN

> > 13th April, 1982

MEMORANDUM TO:

The 500 Largest Commercial Banks in the World

You are responding to the questionnaire from The Banker with your 1981 balance sheet figures. May we remind you that The Banker's unique compilation by asset size is widely acclaimed by central and commercial banks worldwide. Using 1981 balance sheet data the top 500 ranking analyses will this year contain even more essential comparative information and will be published in the June issue.

THE FULL TOP 500 ANALYSES WILL INCLUDE:

THE 500 LARGEST COMMERCIAL BANKS IN THE WORD - BY ASSET SIZE (using U.S. accounting methods with contra items deducted)

TOTAL DEPOSITS — CAPITAL & RESERVES — TOTAL REVENUE PRE-TAX EARNINGS — %, PRE-TAX EARNINGS ON ASSETS — % PRE-TAX EARNINGS ON CAPITAL — % CAPITAL ASSET RATIO — % REVENUE ON ASSETS. PLUS NUMBER OF STAFF.

WHO ARE THE TOP 100 BY — DEPOSITS, CAPITAL & RESERVES, REVENUE, PRE-TAX EARNINGS, PRE-TAX EARNINGS ON ASSETS,

PRE-TAX CAPITAL/ASSET RATIO WHO ARE THE TOP 50 BY - REAL GROWTH IN ASSETS, PRE-TAX EARNINGS (measured in local currency terms)

PRE-TAX EARNINGS PER EMPLOYEE

Banks and institutions serving the financial community worldwide retain and use this essential work of reference throughout the year. Clearly this presents an outstanding opportunity to advertise your correspondent banking services and experience in the international or domestic banking sector. If you would like full details please contact immediately:

The Marketing Director, The Banker, Minster House, Arthur Street, London, EC4 Telephone: 01-623 1211 Telex: 8814734

Extra MDs at Laing

Mr David Bottom and Mr BROWN on April 19 as group oliver Whitehead have been appointed additional joint managing directors of JOHN LAING CONSTRUCTION, with respective responsibilities for building in the UK and for engineering in the UK and for engineering the UK and for engineering in the UK and for engineering the UK and the in the UK and for engineering at home and overseas.

Mr A. E. Hepper has been appointed a director of THE CARDINAL INVESTMENT

Mr Douglas Muirhead has been appointed chairman of LESLIE & GODWIN (SCOT-LAND). He was previously UK chairman of P.A. Management Consultants.

Mr George Veitch has been assumed a partner of BAILLIE GIFFORD & CO., investment

Mr Bruce Leeming has been appointed deputy managing director of London metal commodity brokers, RUDOLF

Sir Neil Shields, who was re-cently appointed a member of the COMMISSION FOR THE NEW TOWNS, has taken over as chairman from the beginning of this month. He is a director of Central and Sheerwood.

M. B. S. Cooper has been appointed managing director of JOHNSON MATTHEY CHEMICALS. He succeeds Mr F. D. Barker who, while remaining a director of Johnson Matthey Chemicals, has relinquished his managing director to conpost as managing director to con-centrate on his work as divisional director of the chemicals and refining division. Mr Barker has been appointed chairman of Rare Earth Products in succession to Earth Products in succession to Dr J. E. Hughes who has resigned. Dr Hughes is deputy managing director of Johnson Matthey. Mr Cooper and Mr J. W. E. Pennington have been appointed directors of Rare Earth Products, a wholly-owned subsidiary of Johnson Matthey Chemicals.

PRIVATE PATIENTS PLAN has appointed Mr Brian B. Brown, as general manager of the PPP Medical Centre, W1.

Mr Rex Chester, chairman of Donald Macpherson Group, has been elected president of the PAINTMAKERS ASSOCIATION OF GREAT BRITAIN; he succeeds Mr Derrick Johnson of ICI Paints division.

Sir Ian Trethowan is to suc-ceed Lord Plummer as chairman of the HORSERACE BETTING LEVY BOARD when he retires on September 30. Lord Plummer has been chairman since January 1974. Sir Ian retires as directorgeneral of the BRC in July-his appointment will be initially for three years.

Mr A. G. Bruce joins JOHN director from May 1, 1982.

Kent, has changed its name to Darcy Products. Mr J. W. G. Proctor takes over as managing director in succession to his father, Mr Gerald Proctor, who died last year.

URWICK ORR & PARTNERS has appointed two directors of operations: Mr W. Thewils, director UK-North, and Mr J. G. Keeble, director UK-South.

Mr Tony Grayson has been appointed managing director of J. E. MATTHER & SONS, Leeds, in succession to Mr Tom Hewitt. who has retired. The company is a member of the Matthew Clark Group.

Professor Sir Peter Hirsch has been appointed a part-time member of the UNITED KING-DOM ATOMIC ENERGY AUTHORITY for three years from April 1. He is Professor of Metallurgy at the University of Oxford.

Touche Ross & Co. UK partner Mr Kenner Beecroft has been appointed regional partner, Africa by TOUCHE ROSS INTERNATIONAL (TRI). He will continue as secretary general of the TRI European Group.

Mr D. G. McBeath has been appointed technical director, animal health division, HOECHST UK, following the retirement of Mr J. R. Hepple.

At WILLIAM BAIRD Mr A. R. McCosh and Professor Roland Smith will retire on May 20, when Sir Russell Fairgrieve will be recommended for election as a director.

Mr Arthur C. Richards has been appointed to the board of TSB TRUST CO. He was United Dominions Trust chief executive, and was appointed to the board of Trustee Savings Banks (Holdings) in April 1981.

Mr John Durden has been appointed contracts director for the Midlands and Mr Ian Forrest contracts director for London and South East on the board of DELTA CONSTRUCTION CO. Cambridge.

Mr Kerry St. Johnston has been appointed to the board of Overseas Containers from April 13, 1982, and will replace Sir Ronald Swayne as chief executive on May 7 1982 and as chairman on August 1, 1982.

WHITEHALL PRESS has

The fat that grows out of peace of mind

BY RICHARD LAMBERT IN NEW YORK

IF YOU TOOK all the people employed in the U.S. insurance industry and laid them from end to end, they would stretch from to end, they would street from the southern tip of Manhattan by way of the George Washing-ton Bridge and the New Jersey Turnpike to a joint just short of Salt Lake City. It seems like a lot too many.

The banking industry, which handles three times as much money and many times more transactions, makes do with about 250,000 fewer employees than the 1.9m in insurance.
The advent of the microchip which you might have thought would have brought enormous savings in paperwork—has not yet even checked the growth in the work force.

The theme of a witty and thought-provoking new book by Andrew Tobias is that the U.S. insurance industry is over-weight and inefficient. This argument is built around the idea that, in some ways, insur-ance is analagous to banking. Banks and insurance companies are both financial inter-mediaries. But you are allowed to withdraw from a bank 100 per cent of what you deposit; the amount you get back from an insurance company depends on your bad luck.

The insured as a group will wind up getting back much of what it put in, but just how much each individual can draw out depends on whether he or she has to make a claim.

But what kind of a bank is it that gives you back 65 cents in the dollar? That's how the overall repayment comes out on motor insurance. In other classes of insurance, the proportion held back for expenses, overheads and profit is even greater.

In flight insurance (which Tobias evidently thinks is utter trickery), the payback is 10 cents in the dollar. Some will get more, most will get nothing, but on average the company retains 90 cents of every dollar on this class of business, plus interest earned on premiums.

Put another way, U.S. motor insurance premiums amount to some \$400n a year, and investment income on this money might raise the gross income to roughly \$44bn. Of that sum, only \$20-\$25bn come back to the public.

Not that the money returns effectively. A recent survey of motor accidents suggested that a person who lost up to the equivalent of \$2,500 received payments of more than \$2 for every \$1 of economic lossannounced the appointment of before paying lawyers' fees. But Mr Alan Wells as joint managing those who suffered greater economic losses - presumably Schuster, \$15.50.

those in greatest need-received less than \$1 back for

each \$1 of economic loss. Tobias has some unkilod words about U.S. insurance managers. especially in the mutuals, who are not constrained by share-holders, and who do not live as austerely as their counter-parts say that mutual manage are incompetent or dishonest."

says Tobias dryly.
"Theirs is a noble calling. not unlike religious or govern-ment service. It just pays

better." This is entertaining stuffyet the idea of such large-scale inefficiency is quite hard to swallow, especially in a oursumer-oriented society like that of the U.S. The costs of entry to the industry are not high, and the returns can be very strac-tive. Why hasn't competition sweated the fat out of the industry.

Tobias has a number of explanations. The industry has a long history of cartels. The fire insurance business, for instance, grew up as a massive exercise in price-fixing. Insurance prices, especially for life policies, are very difficult to evaluate and compare. Federal regulations largely exempt the insurance sector, and state regulators are keen to keep even inefficient companies in business, lest policyholders be stranded.

Most important may be the fact that aggressive marketing plays an important part in personal sector business, and customers are often more curcerned about peace of mind than about immediate dollar values Well, ma'am, if you can't afford five dollars a month, you certainly can't afford cancer.")

Yet times are changing. The traditional life insurance classes have been knocked in the last year or two by the impact of high inflation and aggressive non - traditional competition. High interest rates have changed established yardstoks in the property casualty sector almost out of recognition, and a marked deceleration in economic growth has brought a new wave of international competi-

But if the book's points are less sharp than they might have been 10 years ago, its pen-ultimate chapter, "How God Would Restructure the Insurance Industry." is still required reading for insurance executives and regulators every-

The Invisible Bankers by Andrew Tobias, published in the U.S. by Linden Press/Simon and

Petrochemical plants and sea-water destination and, works for metallurgheliotie inling-mili technology, mechanical handling systems for distribution and ware.

housing, automation systems for processing and power engineering as well as bigh

And, of course, complete pipelines that bring oil and gas from remote sources to the centres of consumption. Designed and constructed by Manaesmantr.

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whether with our own or external know how always with creativity and a strong

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WEDNESDAY APRIL 21 1982

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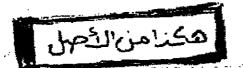
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Engineering contractors to the

oil, gas, chemical, process and power generation industries.



BUILDING AND CIVIL ENGINEERING

Construction outlook not so black |Improvements boost worth £500m

stabilise and lead to modest activity. ing to the latest forecasts from there had been no significant the National Council of Build-real increases in output but the ing Materials Producers (BMP). rest of the year promises more. The BMP's director general, activity and substantial progress Mr Nigel Chaldecest, who has on non-housing work is ex-

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bave since been signs of a recovery. "We believe that in Government expenditure on construction work in 1982-83 sectors of the industry there 1984. year and for the next two ing 24 per cent and 19 per years," he added. cent which are two of the pro-

industry planameted by 12 per underspending in 1981-82. The cent last year and although it major rise within transport is expected to stabilise this year, with two years buoyancy becomes murkier.

performance of 1981, construct advances to be made in both tion output this year will public and private housing

By the end of last month just presented the report by pected in the ensuing two years, his forecasting panel, says that amounting to increases of 41 though the severe winter per cent and 4 per cent in weather was a setback for some overall volume in 1983 and overall volume in 1983 and

Output in the construction grammes which had the largest investment will be on local authority roads (nearly 40 per

The RMP panel says it is the local authorities themselves month in order to allow comment being cautions in projecting a are planning for an increase of on the Budget and the Expendi-

modest rise of 10 per cent in eash spent on trunk roads assumes no underspending which, given the record of this programme, is most improbable. A small real increase in spending councils on road maintenance is planned.

The BMP panel says that Britain's financial institutions world") can meet the demand for home loans that a recovery in the housing market would bring. provided that no restrictions are

put in their way. BMP believes that growth of the home loan market is likely greater staying power than last to be curbed when the authorities become concerned about the private housing starts from availability of loan finances for 117,000 to 130,000 in 1982, and industry to rebuild its working

Laing and Cruickshank delayed cent). its quarterly review on building But there is no evidence that materials and construction for a

ture White Paper and, in particular, to gauge the trends in the housing market more readily. The outcome is a declaration that private housing once again appears to be staging a revival. evidenced by a buoyancy in sales during the opening mouths of

Householders are reluctant to commit themselves after last the most sophisticated in the year's false dawn but, in contrast to 1981, this year's Budget has been well received largely because it has facilitated a reduction in mortgage rates. The stockbrokers believe that

> 145-150,000 in 1983. They do not think that the

Government's forecast increase in 1982-83 capital spending will have any marked effect on public housing starts, though, and say that output in this sector must continue to fall in 1982.

DEBORAH PICKERING suggest that this area of activity

ENLIGHTENED self interest- could, by next year, account for out of its total projected lend-Campaign '82 by the Federation of Master Builders, the Brad- ant than new housing output. ford and Bingley Building Society and timber and building components group Magnet and Southerns.

"Helping builders to help themselves" is one of the slogans behind the campaign, which aims to create a workload of some £500m, via home improvement work, to help the building industry out of its currently depressed state. But both Bradford and Bingley and Magnet were also happy to concede that there was something in it for themselves.

The campaign comes at a time when repair and maintenance work has become one of the mainstays of the UK construction sector and the latest forecasts from the National Economic Development Office

So the demand, present and

projected, clearly exists and what the three proponents of Campaign '83 are doing, according to Mr William Hilton, FMB materials with which to satisfy

The FMB, with some 20,000 member firms, has the men. In the recent budget, it says, the Chancellor "made available a sum of money which, in effect, could apply stimulation equivalent to the gentle massage of net the ailing patient. With Campaign '82," it adds. "the FMB and its partners hope to apply the equivalent of a blood trans-

Bradford and Bingley, meanmaking available £200m this not make economic sense. year for home improvements

and a refreshing honesty about over 40 per cent of total coning of £500m to £500m. The admitting it—was the theme struction output. By the same B and B will, however, apply behind last week's launch of date repair and maintenance on a "slight loading" to interest housing could be more import- rates on money lent for home improvements-not a bad thing when building societies in general are using premium schemes to attract savines from deposi-

> Magnet describes itself as a national director, is to provide market leader in windows, the men, the money and the doors, kitchen units, stairs and closely related products. It was described last year by London stockbrokers Savory Milla as the most successful company in the UK timber sector, The company has close ties

> with the FMB, and is one of its largest member groups. Mag-net is providing substantial marketing support for the campaign and has also arranged to finance some of the lower priced home improvements which might come out of the scheme those where the cost of processwhile, is priming the pump by a building society loan would

> > minal, near Tamworth (value

BOVIS CONSTRUCTION have

Stage three at Shell Centre is

The first phase com-

UK (Administration Services).

prises the conversion of an exist

restaurants with support facili-

£704,000).

WILLIAM COCHRANE

AROUND THE INDUSTRY OATAR'S minister of industry

William Press Group, Tel 01-353 6544

and agriculture has just opened the Hempel Group's fifth factory in the Arabian Gulf at Doha, the capital of the state of Quatar. It is the first paint manufacturing plant there and is a joint venture partnership between the former Hempel agent, Mubarak Bin-Saleh al-Khulaifi and Sons and Kuwaiti and Danish interests.

THE CEMENT and Concrete Association's next Advanced Concrete Technology course will be held on October 11-29 this year and May 2-20 1983 at Fulmer Grange Conference and Training Centre, near Slough. More from the C and CA at 52 Grosvenor Gardens, London SW1 (01-235 6661).

ANGLIA LEAD Roofing is extolling the advantages of lead roofs with the publication of a ten-nage brockure which says that such a roof will last 100 to 150 years and, even when it has reached hie end of its useful lif, the product can be recast. The company says it is unique in using an automatic casting machine with an orthodox sand bed, ensuring its reputation as a leading specialist in lead

UK CONTRACT OVERSEAS

A WASTE water treatment plant for the City of Grande Prairie, Alberta, is worth £8m to WIMPEY CANADA which has just started work on the project with completion aimed for

The scheme calls for the construction of process and administration buildings and the supply and installation of all mechanical, process, electrical and instrumentation equipment. A second contract for Wimpey Canada is a £630,000 job for Bramalea of Toronto, covering stage one of the Carlton Village project at Markham, requiring servicing.

What's new in building

Weatherproceing and thermal insulation are the prime advantages offered with a new roofing system called Rubertherm, which is a polystyrene sandwich, supplied in roll form, and applied on site with a specially developed cold adhesive.

-Maker Ruberoid says its. new system will save fime and ney for the contractor which applies the prefelted laminate cold, thus eliminating the need for hot bitumen. The Ruberoid-Vedatex adhesive has instant grab which prevents the roofing underlayer being moved by wind while laying, yet remains mobile enough to allow the material to be aligned for about 15 minutes.

Another benefit of the new adhesive is that it forms a satisfactory bond in the damp-

A security lighting package which automatically switches on lights when prowlers or would be intruders approach promises security as well as energy savings (lights are turned on only when they are needed). Cailed Radariux, it comes in a standard pack with a power pack/fight control unit, motion detector, lamp bracket with daylight sensor, and a butter.

. The basic system triggers up to 600 watts of light and can be expanded to cover as much or as little of a building or prémises as required.



A roll of Rubertherm being applied to a vapour retarder

More from Arc Dynamics (01-204 7277). *

Ward Brothers has launched a profiled metal liner sheet for industrial buildings. Designed for both roof and sidewall application the "Moduclad" liner panel system is said to provide a superior yet economical allmetal alternative to tradi-tional plasferboard lining. Available in steel or alumi-

nium if comes in two width

modules for use with either metal or asbestos outer cladding and conventional insulation infills, more on 094 44421

Economic, self-adhesive cloth tape for masking out cats-eyes, grids and manholes during road surfacing is introduced by Rotunda (061 336 44331.

Standard widths are 75, 100 and 150 m, in 50 meter roll lengths.

HIGGS AND HILL BUILDING will extend the medical school incorporating hospital labora-tories at St George's Hospital in Tooting under a newly won £9.7m contract

This consists of two blocks, and the buildings are constructed with a reinforced concrete frame clad in bricks to match existing buildings. Work should finish by December

THE CO-OFERATIVE INSUR-ANCE SOCIETY is to develop a triangular area in Mayfair, just off New Bond Street, and has pleased to retain and refurbish existing buildings around the perimeter, building a new £7.5m shops-and-offices complex in the

The development will contain covered shopping parades over whose roofs will be an outlook from three storeys of offices. But because the offices have a limited height in relation to the perimeter roofs, their develop-ment, says the CIS, will be hidden from most viewpoints. Frederick Gibberd & Partners are the architects for the com-

plex where new shops will occupy a net area of about

24,000 square feet and offices cover a net area of around 19,500 square feet. MORE THAN £7m worth of new work has been secured in this first quarter by G. E. WALLIS & SONS, with a f2m scheme for Cwbran Development Corpora-

tion heading the list. This is for the construction of 108 homes

UK CONTRACTS

ments in Gwent and mid-Glamorgan are worth £1.3m and there is a £350,000 new primary school contract at Pontypool.
Again in Gwent, a £600,000 contract is to build homes for senior citizens at Pontnewydd.

In London the company will construct shops and offices at Borough High Street, SE1 for the Special Trustees of Green Special Trustees of Guy's Hospital; undertake refurbish-ment of Fulton House for the Iron Trades Mutual Assurance Company (£im); reroof refurbish the Neptune Hall of the National Maritime Museum for the PSA (£350,000).

At the Eastern Docks at Dover, Wallis will carry out refurbishment of the booking hall facilities for a further £1m, and in Tunbridge Wells, Kent, another refurbishment scheme for Legal & General Assurance (Pensions Management) is worth

Two contracts, together worth over £600,000, are for the restoration of the Chamber ceiling of the House of Lords where the company will be responsible for supplying and fixing new joinery and structural carpentry.

FIVE CONTRACTS (total value £5m plus) to build houses. bungalows, flats and flatlets in Liverpool, St. Helens and Man-chester have recently been awarded to Boskalis Westminster Construction.

Largest of the three projects located in Liverpool, is the erection of 94 dwellings at Barlows Lane for the Rodney Housing engineering Association and the Anchor Associated engineering Housing Association Valued at over £1.5m this comprises flats. Two other housing develop- flatlets, wardens' houses and

bungalows. For the Venture Housing Association, 49 dwell-ings will be built at Liverpool's £944,000 scheme. Thirty-eight aged persons flatlets and one been awarded a further £4.7m refurbishment contract for Shell warden's flat will be built the City of Liverpool (value in the downstream building which has been divided into two £734.000).

Worth £1.2m, 71 flats, houses and bungatows will be con-structed at Pigot Street, St Helens for the St Helens Metropolitan Borough Council.

In Manchester, through the

contractor's regional office, 38 flats, two wardens' units and communal accommodation are heing built at Crumpsall for the £724,000).

THREE ROAD contracts in the West Midlands, together worth more than film have been CONSTRUCTION. Two of them are for new roads at Telford. Shronshire, for Telford Development Cornoration and the height between 50 metres and largest (worth about \$1.4m) is for 105 metres, and the construction the construction of the 2.7 kilo- of the associated foundation metre North District Road works. Also included is the dis-between Trench Lock and Lee-gomers.

works. Also included is the dis-mantling of 30 existing masts ranging in height from 15

Another contract, worth about metres to 100 metres. \$1,17m is for a road just under one kilometre in length, linking CEMENTATION Wronkwardine Wood Way and St AND MECHANICAL SERVICES George's Road at Donnington (a division within Trafalgar

extending storage facilities for side to Saltend near Kingston-Texaco at Kingsbury Oil Ter- upon-Hull.

ing coffee lounge area into nine individual private dining rooms, together with adjacent toilet facilities. The second phase is to form a new kitchen and two

Family Housing Association THE BBC has recently awarded (Manchester) (valued at EVE CONSTRUCTION special at EVE CONSTRUCTION special projects division a contract valued at £2.3m for new aerial support towers at Rampisham Transmitting Station, Dorset. swarded to TARMAC REGIONAL about 19 km west of Dorchester and will involve the design/ detailing, supply and erection of 34 new steel towers ranging in

PIPELINES The other road contract worth Construction) has been awarded about 59.7m, is for resurfacing a £926,000 contract from BP the M6, between inactions 3 and Development (UK) for a six Warwickshire County inch diameter 27 km long pipeline to run from BP's rough Work has just started on terminal at Easington, Humber-

The Building Research Establishment has asked us to make it clear that the remarks reported on last week's building page and attributed to Dr Stephen Wozniak represented his own views and not those of the BRE.

COMPANY NOTICES

COMPAGNIE. FINANCIERE DE PARIS ET DES PAYS-BAS

NOTICE TO SHAREHOLDERS AND TO HOLDERS OF THE CONVERTIBLE

DS ISSUED IN 1976 WITH A RISING INTEREST RATE.

Kingdom shareholders may apply to S. G. Warburg & Co. Ltd., n Street, London, EC2P 2E8 (Tel: 01-600 4555, Ext. 6118) for COMPAGNIE PINANCIERE DE PARIS ET DES BAYS-BAS

EMPRESAS LA MODERNA SA DE C.V. FLOATING RATE NOTES DUE 1988

FINANCIAL TIMES

PUBLISHED IN LONDON & FRANKFURT

not Office: The Financial Times Limited; Bracken House, 30 Camero Street, Levi der 95:4871, Telex: (Advertising) 88:4033, Taleprans: Finantine, Limiten, Telephon Univert. Office: The Financial Times (Carepa) Ltd., Oxiquettstr., 54, 0-6000 Frank det Germany, Telex: 416193, Telephone: 7598-0. Editoria: Frankonnike 72-81.

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The First Canadian Bank Bank of Montreal Notice to Holders of FLOATING RATE DEBENTURES,

Be advised that Bank of Montreal has appointed Morgan Guaranty Trust Company of New Yorkat its main office at Avenue des Arts 35, in Brussels, Belgium, as a Paying Agent for the Series 6 Debentures.

SERIES 6, DUE 1991.

Dated at Montreal, Quebec, Canada this 9th day of April 1982.

BANK OF MONTREAL

R. MUIR Vice President and Secretary

NOTICE TO HOLDERS OF EUROPEAN DEPOSITARY RECEIPTS (EDRs) IN ASAHI GLASS CO., LTD.

NOVA SCOTIA POWER CORPORATION 93% Sinking Fund Debentures 1989

The Bank of Nova Scotia Trust Company Channel Islands Limited as Fiscal Agent announce that the entire cademotion instalment of US\$2:100,000 due 15th May, 1982, has been met by purchases in the market.

REPUBLIC OF COSTA RICA

Floating Rate Note issue of US\$20 million April 1978/85

The rate of interest applicable for the six-month period beginning on April 14th 1982 and set by the reference agent is 161% annually.



Ok Tedi Mining Limited

Bank of America

Investment Banking Group

Acted as adviser to the consortium members

The Broken Hill Proprietary Co. Ltd. Standard Oil Company (Indiana) Metallgesellschaft AG. Degussa AG.

Deutsche Gesellschaft Fuer Wirtschaftliche Zusammenarbeit (Entwicklungsgesellschaft) mbH.

in developing a financing plan for Stage 1 of the Ok Tedi Gold and Copper Project being undertaken by

Ok Tedi Mining Limited

which is owned by the above consortium members

The Independent State of Papua New Guinea.

Financing to be provided through:

Export Finance and **Insurance Corporation**

Export Development

Kreditanstalt Fuer Wiederaufbau

Corporation **Oesterreichische** Kontrollbank AG. **Export Credits Guarantee Department** Overseas Private

Investment Corporation

With additional financing available from a syndicate of international banks.



BANKOFAMERICA

BUSINESSMAN'S DIARY

UK TRADE FAIRS AND EXHIBITIONS

Date	Title
Current	Birmingham Motor Show (0602 51202) (until
Current	
Apr 18-19	
Apr 19-23	International Fire Security and Safety Exhibition
Apr 20-22	
Apr 20-23	-IFSSEC (01-388 7661)
	Communications Equipment and Systems Exhibi-
	tion-COMMUNICATIONS (021-705 6707)
Apr 22-24	International Property Exhibition (01-499 8311)
	international Property Exhibition (01-28 6011)
Apr 22-May 3	International Ideal Homes Exhibition (021-705
Apr 23-25	Computer Fair (01-643 8040)
	Storage Handling and Distribution Exhibition-SHD
Apr 26-30	Storage usuams and Distribution exmoraon-sun
a 00 00	(01-446 2411)
Apr 28-29	EIA Engineering Exhibition—ENGEX (0403 69390)
May 4-7	Home and Contract Textiles Show (01-385 1200)
May S-10	Optrafair (01-405 8101)
May 9-11	
May 11-13	Microcomputer Show (09274 28211)
	montestant past (see 1 tours)

Bingley Hall NEC, Birmingham Exhibition Centre, Harrogate Barbican Centre Olympia

NEC, Birmingham Cumberland Hotel, W.1 NEC. Birmingham Earls Court Earls Court

Sandown Park, Esher

Dufay Bitumastic Minet Morthern Eng into

Olympia NEC. Birmingham Exhibition Centre, Harrogate Wembley Conference Centre

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OVERSE	AS TRADE FAIRS AND	E
Apr 14-23 Apr 15-24	National Mechanics Trade Fair (01488 8686) International Electronic Packaging and Production Equipment Exhibition — INTERNEPCON	Sao I
4 00.05	(0483 38085)	Pekir
Apr 20-25	(01-486 1951)	Helsi
Apr 22-26	International Carpet, Wallpapers, Wall Coverings and Furnishing Textiles Exhibition—PARITEX (01-139 3964)	Paris
Арт 25-29	Agricultural Industry Exhibition—SAUDI-AGRI- CULTURE (01-486 1951)	Riya
Apr 26-29	Health, Safety and Environment at Work Exhibi- tion—ARBO (01-228 2880)	Amst
Apr 27-30	Biochemical and Instrumental Analysis Exhibition (01-486 1951)	Muni
May 1-5	Fast Food and Catering Exhibition (01-935 8200)	Duba
May 3-6	Offshore Technology Conference and Exhibition (01-486 1951)	Hous

XHIBITIONS

Sao Paul	0
Peking	
Helsinki	

terdam

Houston May 6-11 KORTEX S2—Rorea International Textile
Machinery Exhibition (Seoul 778 0821)

May 11-14 SITEV 82 International Exhibition of the Suppliers
of the Vehicle Industry (Geneva (4122)
32-98.08)

BUSINESS AND MANAGEMENT CONFERENCES

Apr 14-15	The Economist: Economic Regulation in Practice -Enforcement procedures and their implica- tions for industry (01-839 7000)
Apr 16	
Apr 19-20	The Taxtile Institute: Structure and Properties of Modern Fibres (061-834 8457)
Apr 20-22	Frost and Sullivan: Life sciences—market oppor- tunities in biotechnology (01-486 8377)
Apr 21	LCCI: Doing Business with the U.S. Government —Winning, Financing and Managing U.S. Gov-
Apr 21	ernment Procurement Contracts (01-248 4444) The Henley Centre for Forecasting: Exchange Rates in the Eighties (01-353 9961)
Apr 21-22	Crown Eagle Communications; Franchising (01-636 0617)
Apr 21-23	INSIG: International Banking Seminar—Banks and Computers (Paris 7630724)
Apr 22-25	NAPF 1982 Annual Conference (01-681 2017)
Apr 26-27	International Chamber of Commerce: Financial Futures Markets (Paris 261.85.97)
Apr 25-30	Lloyd's of London Press: International Maritime Seminar on Law of Collisions (01-353 1000)
Apr 28	Arab-British Chamber of Commerce: Focus on Saudi Arabia (01-629 1249)
Apr 29	IPS: Electronics—the industrial buyer's guide (0990 23711)
Apr 29-30	FT Conference: Seventh Industrial Relations Conference—Will Tebbit Succeed? (01-621 1355)
May 4-6	PM: London Personnel Management Conference (01-946 9100)
May 48	Institute of Metal Finishing: Annual conference and exhibition (021-622 7387)
Accomp suisblue 4	

University College, Oxford Bowater Conf. Centre, SW1 UMIST. Manchester Sheffield University

69 Cannon Street, EC4 London Press Centre Churchill Hotel, W1 Paris

Boursemouth Zurich Southampton Hornton Street, W8

Penta Hotel, London London Hilton

Royal Lancaster Hotel, W8 The Old Ship Hotel, Brighton Anyone wishing to attend any of the above events is advised to telephone the organisers to ensure that there has been no change in the details published.

1. FINANCING

creation of a 63-kV system.

- Islamic Development Bank:

Lot No. 1: Civil-engineering work

replying to the invitation to tender) Lot No. 3: Electrical equipment

2. DESCRIPTION OF LOTS

Lot No. 4: 63-kV system

amount of \$U.\$. 150 for Lot 2.

INTERNATIONAL INVITATION

TO TENDER BIDS FOR THE EXPANSION

OF THE BOULAOS POWER PLANT

(REPUBLIC OF DJIBOUTI)

Électricité de Djibouti has decided to expand the production

and distribution systems for the City of Djibouti. This expansion project will include two diesel-powered

generators designed to burn heavy fuel and capable of

producing 15 MW each in continuous operation plus the expansion of the 20-kV distribution system and the

This expansion project will be financed by an international group consisting of the following:

- Caisse Centrale de Coopération Économique Française.

Lot No. 2: Electromechanical equipment (Lot reserved exclusively to manufacturers of diesel motors or generators

Lots 1, 2 and 3 are open to international competition.

equipment produced in France or in the Franc Zone.

Lot 4 is reserved exclusively to French bidders supplying

Interested bidders are invited to announce their intentions

indicate which lots they are interested in.

Tender documents will be available at the following address

ELECTRICITE DE FRANCE &

Direction des Affaires Extérieures et de la Coopération

68, rue du Fg-St-Honoré - 75008 Paris - France Tel. 764.66.64 - Telex EDFAE 660434 F

in writing or by telex no later than April 20, 1982, and to

as of early May 1982. Payment is to be made in the form

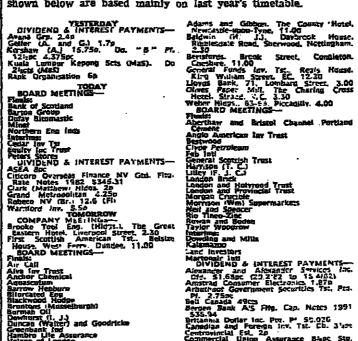
of a check payable to the order of Électricité de Djibouti

in the amount of SU.S 100 for Lots 1, 3 and 4 and in the

Kuwait fund for Arab Economic Development; Arab Fund for Economic and Social Development;

WEEK'S FINANCIAL DIARY

The following is a record of the principal business and financial engagements during the week. The board meetings are mainly for the purpose of considering dividends and official indications are not always available whether dividends concerned are interims or finals. The sub-divisions shown below are based mainly on last year's timetable



Goode Durrant and Murray Grp. 3-5ecpt. 1.75gc Geater London 31pc 1980-82 4'mc Habitat Mothercare Ln. 5act.29353 Isle of Max Govt. 31pc 1953-83 7'mc McLeod Ressel B.ApcPt. 2-73853pc Mander's (Hilest.) 5pcPt. 1.75pc Marder's (Hilest.) 5pcPt. 1.75pc Marder's (Hilest.) 5pcPt. 1.75pc Marder's (Hilest.) 5pcPt. 1.75pc Morgan 1J. P. I Inc. 85cts. Do. Idr's 55cts Newcastic Upon Type 9'mc Cons. Red. 1961-83 4'mc North 8'rish Pross. Ln. 4'mc Octocental Host Spc. 3-pc Coctocental Host Sp (8. F.) Reel Est. Inv. 7st., Sett

ets tural Securities 7pcDb. l-pc ers 2.1s Pfd. 52.5cts es 1.25p erale Fitg. Rate Nates 199: e Hidgs. 3.28e | Spc 1986-89 2:coc | Est. Hidgs. 10-apcPf, | Mann and Troman | FRIDAY APRIL 16
COMPANY MEETINGS—
BIANCE TSL. MEAGOW HOUSE
RICTOR STREET. CINCIPLE. 11.39
BOARD MEETINGS—

DEND & INTEREST PAYMENTS—

Victory sets sail for Cup race

BRITAIN'S America Cup challenger, Victory, will be loaded aboard the Atlantic Container Lines' Atlantic causeway today in the Royal Seaforth Dock's specialised terminal at Crosby on the Mersey.

The British-built, 12-metere yacht is bound for New York in a challenge for the 1983 cup which is being mounted by the before the race.

Victory Syndicate, formed in September, 1980, by Peter de Savary, international merchant banker. The syndicate has promised a substantial amount towards the overall £3.5m budget.

Victory will be towed to Newpor, Rhode Island, where the crews will train this summer

Financial Times Tuesday April 13 1982

CONTRACTS

£12m for Balfour Beatty

Durrant and Murray Gro. 3.50cPf

West Yorkshire Metropolitan
County Council has awarded a
two year contract to Balfour
Beatty Construction. Pontefract
office, valued at £214m, for the
reconstruction of Sheepsear
intersection, Leeds. The works
cover the replacement of the present gyratory traffic system by an arrangement of high capacity signal controlled intersections. Extensive areas of sections. Extensive areas of carriageway are to be constructed, largely over cleared areas of old housing with cellars. Major diversions and services are involved. The works are at the intersection of four major radial routes 1km from Leeds City Centre. Work has

started. Yetholme-Wellington The Yetholme-Wellington 330kV overhead line contract has been awarded to the Balfour Beatty Group in Australia. The project, which will be under-taken by Balfour Beatty Power Construction (Australia) Pvt. comprises 140kms of 330kV single circuit overhead transmission line on lattice steel towers with a contract value of Fiom. The client for the project is the Electricity Commission of New South Wales who will also engineer the works.

BOVIS CIVIL ENGINEERING has won a contract worth £850,000 from the Property Services Agency to build climatic chambers at Foulness. In addition to the main buildings Bovis will also build access and service roads, a safety traverse wall around the test chambers and will feed in essential building services.

PHILIPS counter terminal equipment worth £500,000 will

BALFOUR BEATTY has won be installed during 1932-93 in contracts worth a total of over the West of Scotland TSB, completing the front-office automation programme of every TSB branch in Scotland. A second order worth £250,000, from Tax-side and Central Scotland TSR is for a further 10 "Microbank" automatic teller machines doubling its original ATM order made a few months ago.

Valued at more than 2ms (£1.1m), a contract for providings all furnishings and ancillar equipment at the new Queen Alyan International Airport in Annuan, Jordan, has heed awarded to ERGONOM, a manual her of the Unilock Group. To be completed by August, the com-tract includes products from more than 30 British manufac-turers, as well as Ergonom's own furniture factory. In Wiliships and these will be shipped open land to Amman where Ergonos will be responsible for install tion.

HINDLE COCKBURNS has all order for the first stage of a condition truct to be worth over \$250,000 for the supply of ball valves to a Danish offshore development. The order covers sizes from I had to 12 in valves in carbon steel and aluminum. stainless steel and sluminion bronze and in 180 and 200 pressure classes.

part of the United Group of Companies) has a substantial contract from British Telecom for the supply of linear micro phones for telephone handset

Newport Borough Transport versions of the Scania BR 117 DH chassis. Bodywork for these vehicles is to be provided by Wadham Stringer.

Financial Times Conferences

THE SEVENTH INDUSTRIAL RELATIONS CONFERENCE London — April 29 and 30, 1982

The Secretary of State for Employment The Rt Hon Norman Tebbit, MP, will give the keynote address at this timely and topical conference. Other speakers will include The Rt Hon Mrs Shirley Williams, MP, speaking on behalf of the Social Democratic Party: Mr Walter Goldsmith, Director General of the Institute of Directors: Dr J .S. McFarlane, Director General of the Engineering Employers' Federation; and Mr K. Graham, OBE, Assistant General Secretary of the Trades

GOLD AND THE INTERNATIONAL MONETARY SYSTEM Montreux, Switzerland — May 11 and 12, 1982

Professor Arthur Laffer, one of President Reagan's most influential economic advisers, will be delivering two major papers at this Montreux meeting—one on the domestic situation in the United States in the light of the work of the Gold Commission and the other on developing U.S. policy on the international use of gold.

Other distinguished speakers include: Mr Robert Guy, Director, N. M. Rothschild & Sons Limited; Dr Chris Stals, Senior Deputy Governor, South African Reserve Bank: Mr Meinhard Carstensen, General Manager, Dresdner Bank: Dr Hans Mast, Executive Vice-President, Credit Suisse. While the primary emphasis of this major international conference will be on the monetary role of gold, the agenda will include a thorough examination of the prospects of production and price and an assessment of investment attitudes.

All enquiries should be addressed to: The Financial Times Limited Conference Organisation Minster House, Arthur Street London ECAR 9AX

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Strathclyde Variable Rate Re E8-250 Nd. Real Prop. Tst. 1-250 Webb (Carris of 1913) THURSDAY APRIL 15 COMPANY MEETINGS—

Tel: 01-621 1355 Telex: 27347 FTCONF G Cables: FINCONF LONDON



GENOSSENSCHAFTLICHE ZENTRALBANK **AKTIENGESELLSCHAFT** Vienna

U.S. \$40,000,000 Floating Rate Notes Due 1983

For the six months 13th April, 1982 to 13th October, 1982 the Notes will carry an interest rate of 153 per cent. per annum. Listed on the Luxembourg Stock Exchange. By: Morgan Guaranty Trust Company of New York, London Agent Bank

CONTRACTS AND **TENDERS**

PRE-QUALIFICATION NOTICE

JAVA-MADURA **I50KV TRANSMISSION LINK**

INDONESIA

SUBMARINE CABLE, OVERHEAD LINES AND SUBSTATION PLANT

In anticipation of, and subject to, funds being allocated for the project, Parusahaan Umum Listrik Negara (PLN), the Electricity Authority of the Government of the Republic of Indonesia invitas submission of prequelification information from suitably experienced British Manufacturers and Contractors only who can qualify through experience in manufacture of plant of smills: type and rating for the design, manufacture, supply, testing, erection, setting to work and maintenance on a turnkey basis of any or all of the sections ofwork listed below.

The plant is required to supply electrical energy to the island of Madura from Gresik Power Station situated 6km north of Surabaya on the island

LOT A Two 120MVA 150kV cable circuits each comprising:

— Approximately 425 metres of underground cable between an existing 150kV switching substation at Gresik and the shore line.

— A submarine section to Madura Island, crossing the Straits of Surabaya over a distance of some 3.5km.

— 30 metres of underground section on Madura Island from the shore to the 150kV overhead line terminal tower.

LOT B 16km of double circuit 150kV transmission lines.

Two extension bays in existing 150kV "breaker and a half" outdoor substation at Gresik.

Six (or possibly night) bays of 150kV outdoor double busbar switchgear at Candih aubstation on Madura.

Four bays of 150kV outdoor single busbar switchgear at Labeng and Sukolilo substations on Madura.

20kV indoor switchgear at Candih.

Protection and control equipment for cables, overhead lines, transformers and switchgear.

rretection and control squipment for cautas, overness intex, transformers and switchgear.

One 10MVA outdoor transformer ONAN cooling 150/20kV.

LV switchgear, battery installations 20/0.3kV auxiliary transformers, lighting and small power services.

20kV cables, multicore and talephone type cables, marshalling boxes, earthing facilities.

Substation civil works including foundations for switchgear and transformers, cable trenches, fancing and, at Candih substation, a control building which will also house the 20kV distribution switchgear.

LOT C Radio communication equipment to provide speech and teleprotection etc. channels from Greak to Candih, and power line carrier for the same purpose from Candih to Labang and Labang to

PREECE, CARDEW AND RIDER, Consulting Engineers Paston House, 165/167, Preston Road, Brighton, Sussex BN1 6AF and quoting reference 25010/01.

Such applications should be made immediately since prequalification detos received after 30th April 1932 may not be considered.

LEGAL NOTICES

EDUCATIONAL

The most renowned school for French THE INSTITUT DE FRANCAIS

Overlooking the Riviera's most beautiful bay MAKES LEARNING FRENCH A WONDERFUL & UNIQUE EXPERIENCE

Next 4-week all-day immersion programmes start April 28, June 1 & all year LODGING IN PRIVATE APTS. AND 2 MEALS INCLUDED For adults, 5 levels: from beginner i to advanced it years of research & experience in the effective teaching of French to adults INSTITUT DE FRANÇAIS - FTD10
23 Av. Général-Leclerc, 06230 VILLÉFRANCHE-S/MER - Tel: (93) 80.88.81

ART GALLERIES

	_
AGNEW GALLERY, 43, Old Bond, St. W1. 629 8676. MOSCOW AND ST. PETERS- BURG IN 1800—Exhibin of Prints and Drawings. Until 14 May. MonPrl. 9.30-5.30.	
BROWSE & DARSY, 19, Cork St., W1. 01- 734 7984. British Paintings & Drawings.	ł
DAVID CARRITT LTD., 15. Duke Street, St. James's, SW1. INDIAN PAINTING 1525-1825. Until 30 April. Mon-Fri. 10-5.	\
PIELDBORNE, 63. Queens Grove, NWE. 01-586 3600. PICTURES FROM LONG LARTIN-JIM GILBERT.	

MARTYN GREGORY GALLERY: GEORGE CHINNERY (1774-1852). "Landscapes and Scenes of Life in India." Sti-17th April. 19.00 am-6 pm weekslays, 19.00 am-1.00 pm Saturdays. Códed Easter Weekend, 34, Bury Street. St. Jamers, London, SWI. (01-839 3731.) Personal Motor Cars SANDFORD GALLERY, 1. Mercer Street, WC2. Eighteenth & Nincteenth Century Arts. Tues.-Sat. 12-5.30 pm. Stock Exchange with May 19th 1982 under the heading "O.E.T." (representing the French abbreviation for "Obligations Echangealists comer des Titres indemnifizaires" [10-5. Until 30 April. Mon-Fri. 10-5. Pictures From Long Carter of Chine High St. 377 077 Tube Aldester Office High St. 377 077 077 Tu

PREQUALIFICATION NOTICE FOR CIVIL WOFKS HIS MAJESTY'S GOVERNMENT OF NEPAL MARSYANGBI HYDROELECTRIC PROJECT

His Majesty's Government of Nepal (HMG) has applied for financing from the World Bank and Kreditanstalt für Wiederaufbau (KFW), the proceeds of which would be used for the Marayangdi hydroelectric project (66 MW) in Nepal. There is no commitment on the part of the Bank or KFW to finance the works until such time as the financing is approved and becomes effective. The Marayangdi Hydroelectric Development Board on behalf of the Ministry of Water Resources, invites experienced Contractors to be prequelified as Tenderers for the civil works (Lot 1) for the Marayangdi hydroelectric project in Nepal. Prooursement for such civil works will be in accordance with the guidelines for procurement under World Bank loans and ids credits.

Satient features of main structures and quantities of main civil works involved are as follows:

Main Structures: Diversion Concrete Wair

Headraca Tuanel

Powerhouse (3 shalts) each with Quantities of Main Civil Works (approx.):

ntractors wishing to be included in the list of qualified Tenderers for 1 Civil Works should apply for the Prequalification Documents in one ginal and one copy to: Marsyangdi Hydroelectric Development Board (MHDB)

The Project Manager (Telex 270 natraj np) Marsyangdi Hydroelectric Project Thapathali, Kathmandu/NEPAL

Required Prequalification Documents can be obtained from above office from 15th April till 31st May.

Application should be accompanied by a bank voucher of NRS 3,000 (Nepalese Rupess Three Thousand only), deposited to HMG's account Rajaswa 1-1-5-6 at Nepel Restra Bank, Thepathali, Kethmandu or a Bank Draft of the same amount issued in layour of Mersyangdi Hydroelectric Project, Thapathali, Kethmandu.

Completed Prequalification Documents shall be submitted in one original and six copies to above address of MHDB in a sealed envelope carrying outside the name and address of the applicant and marked as follows: Prequalification Documents

Marsyangdi Hydroelectric Project Civil Works (Lot 1)

not later than 14:00 hours on June 1, 1982.

CLUBS

has outlived the others because of a policy of fair play and value money. Supper from 10-3.30 Disco and top musicians, glamorous hostesses, exciting floorshows. 189, Regent St. -- 01-734 0\$57

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ST. JAMES'S
Landon's most exciting businessmen's night club. No membership needed, a decease of the state . 9 pm-2 am. 4 Duke of York Street, W1. Tel: 439 7242

width 70 m height 26 m gates 11 x 17 m langth 7,100 m diameter 6.4 m height 35 m diameter 16 m

CLASSIFIED ADVERTISEMENT RATES

EFFECTIVE JANUARY, 1982

Single column CHL £ 27.50 Commercial and Industrial Property Residential Property Appointments 29.00 29.00 Business, Investment Opportunities Businesses for Sale/Wanted 20.00 . 6.00 20.00 Hotels and Travel 20.00 6.00 Contracts and Tenders net 12.00 Book Publishers

Premium position available (Minimum size 30 column cms) £6.00 per single column cm extra For further details write to: Classified Advertisement Manager Financial Times, 10 Cannon Street, EC4P 4BY

INVITATION TO BID

REPUBLIC OF INDONESIA **COAL EXPLORATION**

DRILL RIGS, ACCESSORIES AND SPARE PARTS

The Government of Indonesia has applied for a loan from the World Bank for coal exploration, and pre-investment studies in-Indonesia. It is intended to apply part of the proceeds of such borrowing for procurement of drill rigs and spare parts. Bid documents will be available on April 30th, 1982 upon payment of a non-refundable deposit of US\$250 or rupiah equivalent to the Directorate of Mineral Resources at the address below. The bid opening will take place on June 30th, 1982.

Prequalification procedures will not be undertaken but the Republic of Indonesia will reserve the right to reject any bid and postqualification will be undertaken.

Bids for the following equipment will only be considered from companies from member countries of the World Bank, Switzerland and Taiwan.

Tender Document:

5 (five) rotary wireline drill rigs capable of recovering H-size cores from depths up to 300 metres, including accessories, ancillaries, spare parts and tools to support a three- to four-year exploration operation involving 255 boreholes and 25,000 metres vertical drilling.

Directorate of Mineral Resources Jln. Diponegoro 57, Bandung, Indonesia Telephone 73205 Ext. 154 Cable SDM BD Telex 28337 SDM BD

COMPAGNIE FINANCIERE DE SUEZ Societe Anonyme with a Capital of FF 1,421,698,500 Registered Office: I, Rue d'Astorg, 75008 Paris

NOTICE TO HOLDERS OF SHARES AND CONVERTIBLE BONDS OF THE COMPANY

Under the previsions of the Law of February 11th 1982 COMPAGNIE FINANCIERE DE SUEZ will be nationalised through the transfer of the ownership of its shares to the French State.

In exchange for the shares that you are holding, you will receive floating rate bonds guaranteed by the French State and issued by Caissé Nationale des Bandues (CNB), a subject-connect institution managed by Caissé Nationale des Bandues (CNB), a subject-connect institution managed by Caissé Nationale des Bandues (CNB), a subject-connect normalization on the Paris Stock Exchange from the commencement of business on April 13th 1982. The shares are valued at FF 423.09 for the purpose of this acclarage the edisting shares will still be auceed on the Paris Stock Exchange under the heading "D.T.I." representing the French appropriation for "Droits a Titres indemnitaires", "Rights to nationalisation bonds", Caisse Nationale des Banques will in due course publish a communique on the exchange procedures.

In addition, the 7% 1970/1985 bonds of nominal US \$1,000, and the increasing interest rate 1980/1991 bonds of nominal FF 350 issued by COMPAGNIE FINANCIERE DE SUEZ are no longer convertible into shares. There can either be retained by their holders under the original terms (as to maturity and interest rate), or they may be tendered in exchange for the Caisas Nationale one shareds from the maturity of the condense of the Caisas Nationale one shareds found on the parts of the Caisas Nationale one shareds for the 1982 bonds. From the 1982 bonds of the condense of the 1980 bonds will still be quoted on the Parts Stock Exchange with May 19th 1982 under the heading "O.E.T." (representing the French aborevistion for "Obligations Echanocailes control de Titres indemnifizings" Bonds exchangeable for pationalization bonds").

Financial Times Tuesday April 13 1982

7.B1

April April High Low

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7.57

13,34 13,38 13,14

NEW YORK ACTIVE STOCKS

7.54

9,64

18,40

April 8: April 7, April 6

| Stocks Closing on traded price day | Stocks Closing on traded price day | S78,700 214 + 1 | Texaste | S73,800 254 + 1 | S84 | S54,000 624 + 1 | Datagaiot | S31,000 224 - 34 | Amer. Airlines | S88,200 152 + 3

JAPAN** Dow Average (16/5/49) Tokyo New SE (4/1/68)

741.72 752.50 751.80 757.54 819.76 (6/1)

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(c) 459.4 467.8 (c) 690.5 (c)

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18. 19. 10. 6	Utilities 118,52:118.43 118.24 110.16 110.20 109.26 77/10 (8/3) (15/4/81) (8/7/82) 10.5 10.5 10.5 10.5 10.5 10.5 10.5 10.5	(65) (G) 181.25 101.52-102.18 102.45 (5/4) 88.42 (20/1)
(r) ¹⁶⁵ 161 171 m² 181	eDay's high 847.51 low 833.53. April 2 Mar. 25 Mar. 19 Year ago (approx Ind. div. yield % 8.64 8.84 5.92 5.50 Ind Tendance (6)	12/67) (o) 100,3 160,4 100,20 104,8 (22/2) 88.8 (4/1)
The state of the s	STANDARD AND POORS STANDARD AND POORS 1989 Since Compile of Commercial Co	56) (c) 227.51 258 45 258.02 253.45 (5/4) 218.25 (78/D)
er villed er villed	April April April April April April April April Low High Low High Low AMP-CBS General Andust'ls 725.06 128.21 125.22 127.42 127.56 128.25 127.42 127.56 128.21 128.25 127.42 127.56 128.21 128.26 128.21 128.25 127.42 127.25 127.44 127.54 128.26 5.82 AMP-CBS Indust (Composite 116.22 115.48 116.38 114.75 115.12 115.75 122.74 107.54 148.52 4.402 HC NG KONG	(1370) (c) 81,7 81.5 81.4 92.4 (5/4) 84.8 (8/1) 1370) (c) 72.9 72.8 72.8 73.8 (5/4) 85.2 (4/1)
, ; latti	Composite 118.22 115.48 115.58 114.75 115.12 115.79 122.74 107.54 144.82 4.62 HCNG KONG (4/4) (3/5) (28/11.89 (1/6/62) Hang Seng Bank Ind. div. yield \$ April 8 Mar. 31 Mar. 24 Year ago (approx Banca Committa	

Dow lower after featureless morning

هكذامن الأعهل

PRICES continued lower in Index was up 79.6 to 2,844.6. featureless trading as investors Metals and Minerals, however, adopted a "wait-and-see" attitude amid economic and international uncertainty. The Dow Among gains in the Oils. Jones Industrial Average was 0.76 lower at \$42.18 on volume of 22.5m shares at midsession. Declines led advances by six to five. The NYSE All Common Index was 19 cents off at \$66.70.

Uncertainty over the Falkland Islands dispute, projections of poor first-quarter corporate earnings and the lack of compromise between the White House and Congress over Budget proposals

were all factors.

Most issues showed only marginal price changes and trading activity focused on those stocks in merger or other special situa-

tions.

Schlitz was the volume leader and rose i to \$152. Stroh Brewery has offered \$15 a share for 67 per cent of Schlitz's stock, and at last Thursday, 54 per cent of the shares were tendered in response to the bid.

Also active was Hanna Mining, down \$14 to \$352, Norcen Energy is offering \$45 a share for 42.7 per cent of Hanna, but the bid.

per cent of Hanna, but the bid is stalled in court.

Saxon Industries was down it
to \$3. The company expects to

report a pre-tax loss for 1981 and is i default on some of its debt provisions. Northrop gained \$1; at \$47; It plans to sell a plant in California, thus reducing its investment in new equipment to \$25m from \$100m. THE AMERICAN SE Market Value Index was up 2.14 at 272.90 on volume of 2.3m shares.

Canada

CANADA

oil industry.

The Composite Index advanced
The Straits Tir
11.5 points at 1,617.5. The Oil on 5.42 at 741.72.

Advances led declines 163 to 100 as seven of the 14 indices moved higher.
In Golds, Carolin Mines [all CS1] to CS9], Little Long LAC drepped 1 to CS9], and Cambell Red Lace and Carbon CS1.

Red Lake was off 1 at C\$16. Tokyo

Share prices firmed or scattered buying support. Blue Chips were mixed on lack of fresh factors in the market. The Nikkei Dow index rese 20.61 to Nikkei Dow index rose 20.61 to 7.280.82 on thin trading volume of 250m shares. The Stock Exchange index was 1.09 higher at 533.30.

Among factors influencing sentiment were doubts over the

dollar/yen exchange rate and the Falkland Islands crisis.

Major gainers included Hitachi, up Y13 at Y587, Toyota Motor, up Y7 at Y346, Takeda Chemical, up Y13 at Y838, Maisushita Electric, up Y2 at Y959, Masudi Shipbuilding, up Y7 at Y185, and Victor Japan, up Y30 at Y1850. at Y1,850.
The second market traded slightly lower.

Singapore

Prices finished higher on late Boustead added 16 cents at Share prices were sharply higher at mid-session, paced by a strong gain in Oil and Gas stocks. There was specifation that the Federal Government might join the Alberta Gopernment in introducing tax concessions to help the troubled oil industry.

The Composite Index advanced 11.5 points at 1,617.5. The Oil on 5.42 at 741.72.

HOLLAND

BELGIUM (continued)

Jersey may change law on loan security

BY EDWARD OWEN

A NEW LAW has been pro-posed in Jersey to solve prob-Jersey under a law of 1880, but

The Bill is the outcome of fessional community which began in the mid-1970s, when Mr David Morgan, Jersey's former commercial relations officer, produced a series of reports on company law

reform.

bonds accompanied by a system of registration, but, in the pro-pused law, the security interest

ing a title to the collateral.
Other departures from the original proposals are that leases of land and hire-purchase

and rental agreements are not covered.

A provision has been included to establish beyond doubt the capacity of a Jersey resident to put up as collateral movable assets held outside the

The island's finance community believes the proposed law will allow greater flexibility in

Among gains in the Oils.
Dome Petroleum rese it to CS14; Imperial Oil class "A "CS14 to CS34; Ocelot Class "B " i to CS14; and Numac Oil i to CS14 property until the loan is re-

consultations between the deemed.
island authorities and the procreation of a district security interest apart from hypothecation or the traditional pledge.

This will enable a bank, for example, to lend money against the security of a life assurance one of his reports dealt with mortgages of personal property, although his proposals were considerably more comprehensive than those embodied in the present Bill.

policy or or deposits made by a third party which quarantees the debt. A company will be able to put up its portfolio of stocks and shares as security for an investor.

The proposed law will also close the way for the mortgage. policy or of deposits made by

present Bill.

The main change is that Mr Morgan's draft law covered all moveable property, while the Bill is its final form is confined to intangible assets.

Mr Morgan envisaged the introduction of statutory chattel bonds accompanied by a system but in the pro-

these shares as collateral.

The security interests measure is established simply by a is due to be followed by the written agreement and the island's first trust law, and in possession of documents show-due course by amendments to local company law.

Wildlife charity moves

movable assets held outside the fund to move from London last island under foreign law.

August to a new building in August to a new building in Godalming, chistened Panda House.

The building was designed by lending, and provide better Malcolm Hecks Associates of security for transactions. Ripley and built by Crowngap Land and buildings can be Developments of Farnham.

| JAPAN (continued)

	Stock		ii Apgi	April 8	Price Frs.	+ ot	April 8	Price	+_0+	April 8	Price Aust. \$	+or	April 12	Price Yen	+ or
1	AMCA inti,	183		Petrofina	4,920	50	ACF Holding	78,5			3,75	+0.03	Kubota Kumgaal Kyoto Ceramic	354 437	-4 -1
1	Abitibi Agnico Eagle Alcan Alumin	7 223	67g	Soc. Gan. Ban Soc. Gan. Beig	q, 2,790 e: 1,490	-15	Ahold	. 30.7		Acrow Aust Ampol Pet Assoc. Pulp Pap .	1.69 1.40 1.50	0,02	Maada Cons	585	50 +6 +2
۱	Algoma Steel Asbastos	334 121	355g 2 131g	Sofina Solvay Tracton Elect	2,850	: -20) -30	AMRO Bredero Cert		+0.3	Audimco	1.51	-0.01	Makita Marubeni	725	-5 +4
٠	Bk. Montreal Bk. Nova Scotis Basic Resource	나 22 4	223	Union Miniera	2,070 816	·50	Boss KallsTet	. 64 . 45	-3 +2.2 +0.2	Aust Guarant Aust. Nat. Inds Aust. Paper	2,60	+0.81	Marudai Marui Matsushita	805 ;	+4 +2
	Bell Canada Bow Valley	19 15s	19 143a	Viellie Mont.	2,050	-10	Caland Hidgs Elsevier NDU	34.5 147.5	-1.5	Bank NSW	2,70 1,25	+0.01 +0.08	M'ta Elec Works	510	+2
	Brassan A	304	2 29 8 19 14	l			Euro Comm Tst	i 75.7 i 69.5	٠	Bond Hidgs Boral Bi'ville Cooper	1.23		M'bishi Elect M'bishiRi East	248 469	-6 +4
١	B. C. Forest CIL Inc.	234	914	DENMARK	l	١	Heineken	54 17,4	-1.7 -0,3	Brambies Inds Bridge Oll	2.06 2.65	-0,02	Mila	.i 510 i	+4
1	CadillacFairvier Camflo Mines Can Coment,	113	81 ₂ 1054		Price 2	+ or	Hunter Douglas., int-Muller KLM	. 25 109.4	+0.8	BHP Brunswick Oil CRA	0,20	-0.04 -0.63	Mitsu-koshi NGK insulators	575 511	+3 +10
ļ	Can NW Lands	∴ 23 ≽	2312	Andelabanken Baltica Skand. CopHandelaba	385.4		Naarde's Nat Ned cert Ned Cred Bank	; 110	-0.5 -0.4	Cariton & Utd	2,05	0.83 0.94	Nippon Denso Nippon Gakki	541	+3 1
ļ	Can Packers Can Trusco Can Imp Bank	_! —	29 251s	D. Sukkertab Danake Bank	353 127.2	+1	Ned Mid Bank	125.5 123.2	-0.3	CastiemaineTys. Cluff Oil (Aust) Do. Opts	0.51	+0.01	Nippon Oil	911 830	+2
	Can Pacific Can P. Ent Can Tire	205	291 ₄ 147 ₈ 343 ₄	Forende Berry Forende Dan	Ig. 614	+7	Oce Grinten Ommeren (Van) Pakhoed	. 28.7		Cockburn Cemt. Coles (G.J) Comaico	1.20 2.06	+0.05 +0.08	wibbon stagi	237	-2 +8
l	Chieftain	- 90	1 19	GNT Hidg	271.4 175		Phillips Rijn-Schelds	24.7 24	+0.1	Crusader Oil	3.46	+0.01	Nissan Motor	718	+3 +5
l	Cominco- Cons Bathst A. Cont. Bk. Canad	2 74	74	Nord Kabai Novo ind Papiriabrikker	140 1,598	+8	Robeco	. 122.8	-0.6 -0.7	Duniop Elder Smith G M Endeavour Res		+ D.02	Nisshin Steel Normura NYK Olympus	162 435 280	-2 -2 -1
ł	Coseka Rearc'es Costain Daon Devel Denison Mines	61 ₉	6 6 2.30	Papirfabrikker Privatbanken Provinsbanker Smidth (FI)	183,6 113,4 221	-14	Rorento Royal Dutch Slavenburg's	147.8 89.3	+0.4 -0.7 -2	Gen Pro Trust	2.90	+0,01	I Other """		-10 -20
l	Denison Mines Dome Mines	227 ₈	221 ₂	S. Berendsen Superfos	; 500	5	Tokyo Pac Hg	208 i	+0.6	Hooker	1.46	10,0+ 10,0—	Renown	697	3 +4
l	Dome Petroleum Dom Foundries	A 31	3112		<u> </u>		Viking Res Vmf Stork VNU	49 57.6	+1	Jimb lana(SOoFP Jones (D) Kis. Ora Gold	142	0.08 0.01	Sanyo Elect Sapporo Sekisui Prefab	676	+2 +1 +1
ļ	Dom Stores Domtar Falcon Nickal	183 ₈ 56	184g 551g				Volket-Stevin West Utr Bank	. 34 :	+9	Loonard Oil	2.7	-0,01 -0.1 -0.01	SharpShisledoSony	' 780	5 +5
İ	Genstar GtWest Life Gulf Canada	J 915	215	FRANCE	1 1	1 _				Meridian Oil Monarch Pat	0.17 0.10	-0.01 -0.02	Stomo Marine	228	+2 -5
۱	Gulfstream Res., Hawk Sid. Can.,	3.70		April 8	Price Frs.	+ or	ITALY			Myer Emp	1,32 2,45 1,80		Talsei Corp Talsei Corp Talseo Pharm	270 585	+ 15
l	Hollinger Argus Hudson Bay Mni	. 27 g 171g	263 _e	Emprunt 4% 19 Emprunt 7% 18 ONE 8%	75 6.295	-15	April 9	Price · Lire	+ or	Nows Nicholas Kiwi North Bkn Hill	1.28		Takeda TDK Teijin	3.200	+ 13 + 2
l	Hudson's Bay Husky Oil	2212	221g	Air Liquide Agultaine Au Printemps	470	+6 +2.1	Assicur Gen Banca Com'le Bastogi Fin	<i>5</i> 8,200	+50 +600 +11	Oakbridge Otter Expel	1,20 0,60 1,55	~O.05	TEIKOKU OIL	956 452	+11 -3
۱	imp Oil A	. 22 185	21 155a	BIC	! 418 ;		Centrale Credito Varesino	5,020 8,520	+20 +112	Pan Pacific Pioneer Co Queen Marg't G.	0.12 1.32 0.08	O.02	Tokio Marine Tokyo Elect Pwr. Tokyo Gas	113	- 2
ł	Indal Inter, Pipe	1578	153g	BSN Gervais Carrefour Ciub Mediter) 1,599	+14	Finalder	40 2,910		Santos	1,82 4,30 0,75	-0.05 +0.05	Tokyo Sanyo Tokyu Corp Toshiba	405 213 :	+5 +2 +2
ı	Mac Bloedel Marks & Spence	ri 912	221 ₂ 91 ₂	CFAOCSF(Thomson)	541 ;	-1 -2 -2	Italsemanti	56.500	-300	Southland M'n'g. Sparges Expel		-0.05	TOTO Toyo Seikan Toyota Motor	412 435	~2 +3
Ł	Massey Ferg McIntyre Mines. Meriand Explor.	. 3514	, 3312	Cie Bancaire Cie Gen Eaux	310	71	Olivetti	2,770 2,610	- 60	Thos. Natwide	1.85 1.93 1.52	0.01 + 0.04	Victor Wacopi	1,850 ; 712	+ 7 + 30
ľ	Mitel Corp Moore Corp Nat. Sea Prods A	. 2214 . 3858	223a	Creusot Loire CFP	i 71.5	+0.1 -0.5 -0.1	Snia Viscosa	720 6,400	-7 ÷550	Waltons	0.11		Yamazaki	555	-22 -10 +2
l	Noranda Mines Nthn. Telecom	165g		Dumez	- 45.3 1,043, L. 375.1	-0.5 +8 -2,9	do. Pref	3,870		Woodside Petrol Woolworths	0.75 1.60	-0.03	Yasuda Fire Yokogawa Bdge.	560	
l	Oakwood Pet Pacific Copper Pan carr Petrol	. 10la	914 1.54	Lariarge L'Oreal		-1.9 -0.2 +5	NORWAY		- }	Wormald Intl	2,30		SINGAPORE	1.	_
l	Patino Placer Dev	184	12	Machines Buil.	1,658	+30	April 7	Price -	+ or	HONG KONG		}.	April 8	8	+ er ~-
ŀ	Power Corp Quebec Strgn	114 2,80	111 ₈ 2,65	Matra Michalin B Most-Hennesay	681	-51 -2 +1	Bergens Baks	112.5 117.5		April 8	rice I.K.S	+ 01	Boustead Shd Cold Storage DBS	3.86 - 7.75	0,03 +0,02 0,1
ľ	Ranger Oil Reed Stenhs A	7 ¹ 4	115g	Pernod Ricard) 57,4; 349.0;	+0.3	Creditbank Elkem Kosmos Norsk Hydro	133 45 385		1 - 1 -		+0.3 ii	Fraser & Neave Haw Par	5.9 ; 3.20 -	+ 0.04 + 0.01
ć	lio Algom loyal Bank loyalTrustco A centre Res	23	25 25 137 _R	Perrier	170.8 142.5	Z.5 (i	Norsk Hydro Storebrand	322.5 216	-7.5	Cosmo Prop Cosmo Prop Props Harbour Hang Seng Bank, HK Electric HK Kowloon Wh.	10.2 0.5		Malay Banking Malay Brow		rO,15
5	centre Res leagram theil can Oil	644	578 641s 157a	reconte	-, A15 I	+6 					5.BO	+ U. 13 I 4	3H E I I 3 / I Hammer	8.5 4	-0,2 -0,02 -0.2
S	teel of Len A	214	21	Roussel-Uciaf Skis Rossignel Telemech Elect Valec	. 528 748	-9 +8 +0,5	SWEDEN			iX Telephone 2	28.9 - 14.5 -	-0.5 ° +0.5 ;	UOB		-
Ī	eok B exaco Canada homson News A	71e 25% 22	71 ₂ 25 22					Price i -	' <u>-</u> - I}		ı,	+0.7 +0.85 +0.1	SOUTH AFRICA		,
Ŧ	oronto Dom Bk. ransCan Pipe rans Moto, Oli A	29 214	294 214 814				Alfa-Laval	216 -	1 8	SHK Props 6 Swire Pac A 3	6.6 0.8	+0.2 +0.3			- or
11	td. Siaco Mines /aiker (H) Res /estocat Trans	4.35	4.35 151 ₈	GERMANY April 8	n	- 13	Astra	****		Vhosi'k Mariti's	. <u>.</u>		AE & CI	7.5 12.10	0,15
W	eston (Geo)	2614			Price Dm.		Soliden	214 230		ADAM		18	Ingle Am Gold	77.0 - 2.7 +	4,5 0,1
_	,		- }	AEG-Telef Allianz Vers BASF	136.4	. <u></u>	riceson	205 -	-0.5 -1	APAN .	i.		XXTIOW KALING[59 -	0,15 1.75
			- 1	BAYER. Eayer-Hypo Bayer-Verein	214 8	+0.4 +2.0	ortia (Free)	L15 i	-2	April 12 P	rice +	~" }°	orrie Finance	2,35	-0.05
			ŧ	BHF-BankBAW	. 225.0:	.a e 18	fo och Dom	L33 🕹	-	mads	537 -		Priefontein	26,50 30,26	0.25 1.50
A	USTRIA			Brown Boveri Commember	226.0' -	-0.2	ikandia	151	j B	ridgestone	137 4 160 -	20 H	lighvold Steel	4.12 8.3	4.5
	April 8	Price	+ or	Conti Gummi Daimier Benz Degussa	285,5 226,2	- a - 8	r Kopparberg 2 Ven Handelson .	97,0; -	8 0	ziei	510 - 185 +	i K	loof	6.1	1,5 0.25
	reditanstalt	221	+1	Demag D'ache Baboock.	141 1204.5	I V	wedish Match' 1 olvo(Free) 1		1 12	aiwa House 4	107 ¦ -	-12 R	rotes Midgs	2,60 9.B	*****
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_		Frs.	1i	WAN	170	AS IH	off-Roche 1:10 6	125; ±	250 / K	o-Ham 4 o-Yokado 8 ACCS 4	80	4 158	theo Bresii 1	1.55 —	0,84 0,85
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Çi	ment CBR skeriii	206	-40 II	Suenoh Ruck Preusseg Chein West Elect	888.5r	Q	er-Buhrile 1,	,250. — 239. +		so Sosp 5		L SO	NIZA CITUZ	9.20 1.80 +0	j.36
Ľ	brique Nat	2.695	_26	chering	264 387	51	undoz (Pt Cts)	,200, 538;	Blir	kine S	D3	:_ l_	le Rio Doce 1:	'	
SE 3e	P. MING	1,350		nyssan	224.5	1.1 S	wissari	743 -	2 Ko	matsu Fift Si mishrolky Si	95 +1 95 -1	! .	Tumover: Cr 8, Volume: 843 Source: Rio de 14	454.6m, ,1m. mairo SF	L
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ď	n Hidgs	5,920		followragen,	.144.5	¥ کید کا	Interthur 2, urich ins 15,	150	75 23	epended, xd Ex o	Sividend	l, and	is scrip issue. x	i Ex 194	te.
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BY COLIN MILLHAM

Counting on the fleet

INTEREST RATES reacted predictably to the Falkland Islands crisis last week, creating an unusual problem for the London money market, and adding a new dimension to the uncertainty about future trends.

The problem is that the upward pressure on rates, coupled with the downward pressure on sterling, is strictly political. The cost of the naval operation, which depends on so many unknown factors, has not been taken into account; only the Government's ability to survive the next few weeks or

the opposite direction. The ago when no one wanted to part money supply figures released with the bills on the prospect last Tuesday were better than of falling rates. expected, as was the wholesale The situation is obviously not price index published the sustainable where overnight

previous day, but the market money is drifting around trying Monday and Thursday. One large took very little notice because to find a home, and dragging factor was an increase of £222m

Market liquidity has shown signs of improving, although the true position has been true position has been exaggerated by nervousness about the political situation. This has led market operators to sell as much paper as possible to the authorities, rather than borrow money on the open market. It did not appear to be through any desire of the Bank of England that its dealing rates on bend four bills rose slightly last week, but was simply a reflection of the desire to sell bills. This is in stark contrast ing the market are pointing in the opposite direction. The money supply figures released

The situation is obviously not

BANK OF	ENGLAND	TREASURY	BILL	TENDER

	April 8	April 2		April 8	April 2
Bijls on offer Total of	£100m	£100m	Top accepted rate of discount	12.8552%	12,47422
applications Total allocated Minimum	£216,65m £100m	£442,79m £100m	Average rate of discount Average yield		12.47172 12.872
accepted bid Allotment at minimum level	£96,795 37%	£96.89 91%	Amount on offer at next tender	£100m	£100m

FT LONDON

INTERBANK FIXING

3 months U.S. dollars						
bld	155/6	offer 15 5rd				
6	months 1	U.S. dollars				
Lie	1554					

The fixing rates (April 8) are the arithrates for \$10m quoted by the market to working day. The banks are National Deutsche Bank, Banque National de

of its concern with the Falkland Islands.

down the key seven-day interbank rate, while fixed period
rates rise on the back of a
weakening pound.

Last week's overall shortage of
about £1.25n was in line with
represented the unwinding of market expectations, with the the help given by the authorities major shortfalls concentrated on during the tax paying season.

WEEKLY CHANGE IN WORLD INTEREST RATES

LONDON .	Apr. 8	;change		Apr. 8	change
Base rates	13	lless) a	NEW YORK	160	Unch'd
		Unch'r	Federal funds	.145p-1478	-154
3 mth Interbank	13:1-13%	1+22	3 mth Treasury Bills	13.17	0.01
Treasury Bill Tenger	14.10217	+0.3104	6 Mth. Treseury Rills	13.16	+0.16
Band 1 Bills	134	Unch'd	3 Mth. CD	14,85	+0,35
	13	Unch'd	FRANKFURT	1	. i
	1254	'Unch'd	Special Lomberd	9,5	Unch'd
3 Mth. Treasury Bills	125 13-13 <u>-</u>	+ 38	One Mth. Interbank	9,35	-0.10
1 Mth. Bank Bills 3 Mth. Bank Bills	12+6	+ åg	Three month	9,30	_Q,075
2 Will Direct Build	-TE	_	PARIS		
TOKYO	i	!+8_09375	Intervention Rate	17	Unch'd
One month Bills	7,0625	1	1 Mth. Interbank	.16⊹	18
Three month Bills	7,0625	+9.08125	Three month	16 _{fk}	±τe
BRUSSELS	-	i .	MG AN		
One month	14%	Unch'd	One month	80 is	Unch'd
Three month	145g	·Unch' d	Three month	20%	:9
AMSTERDAM	!	:	DUBLIN	•	
One month	84	3g	One month	203 ₈	.+3g
	814		Three month	2012	Unch'd
- ((1 ~ ;			

LONDON MONEY RATES

8 inqA 1982	Cartificate of deposit		Authority deposits	negotiable benda	House Deposits	Company Deposits	Market Deposits	Tressury	Bank Bills o	Trade Bilis #
Cvernight		1-1212	12-124	<u>, </u>		114-12	10-121-			
2 days notice			1214-1213	!	_			- 1	~	_
7 days or		i	_ `	1 — ;	_	I _	_	- I	~	~
7 days notice		113, 124	1234-1278		_	124-1312	1117-12			
One month	. 13-չ-13-ե	13 _{rs} 131 ₄	13 lg -	' 145 ₈₋ 141 ₈ '	13%	1312	12%	13 .	13.13	1312
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Three months.				: 1418-1376 :	1356	13 tg	12 s	1279-1213	12 .	135a
Six months		. 135g-137g	1313	1358-1314	1334				127g.13Jg	133g
Nine months		13 m 137g	_	14-1370	157g	. –	-		~-	_
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13½ per cent.

Approximate selling rates for one month Treasury bills 12½ per cent; two months 12½-12½ per cent; three months 12½-12½ per cent.

Approximate selling rate for one month bank bills 12½-12½ per cent; two months 12½-12½ per cent and three months 12½-12½ per cent; one month trade bills 13½ per cent; two month 13½ per cent; three months 13½ per cent.

Finance Houses Base Rates (published by the Finance Houses Association) 14½ per cent from April 1, 1962. Clearing Bank Deposit Rates for sums at seven days' notice 10-10½ per cent.

Clearing Bank Rates for lending 13 per cent.

Treasury Bills: Average tender rates of discount 12.7821 per cent.

Certificates of Tay Deposit (Series 5) 13½ per cent from March 8. Deposits withdrawn for cash 11 per cent.

EURO-CURRENCY INTEREST RATES (Market closing Rates)

April 8	Sterling	U.S. Dollar	Canadian Dollar	Dutch Gulider		Swiss Franc	D-ma	rk	French Franc	italian Lira	Belgien Fr Conv.	anc ·	Yen	Danısh Krone
Short term	1176-1218 1236-1258 1574-1376 1356-1378 1354-1378 1354-1376	1479-1519 15-1514 1512-153; 1612-153; 1559-1578 1514-1612	14-15 14-15 16-1656 1614-1658 1638-1654 1658-17	812-858 814-812 814-858 814-858 814-858 859-851	; 2 ; 4 ; 5	14-314 14-3 14-438 14-514 13-516	914-9 914-9 914-9 918-9	58 (4 14	18-24 24-29 25-27 23-25 22-33 4 191 ₂ -201 ₂	18-21 23-29 26-29 251 ₂₋ 27 241 ₄ -251 ₄ 241 ₈ -251 ₄	14-20 17:-19:4 14 18-19:4 14 17:g-18:8 14	12-12 to 1 13-14 15g-147g 134-15 17g-151g 17g-151g	614.61g 6.2.6.2 634.61g 634.61g 634.61g 634.61g	1978-814 19-2014 18-1914 17-1815

ECU linked deposits: one month 157-152 per cent; three months 147-152 per cent; six months 147-1475 per cent one year 147-154 per cent.

Asian S (closing rates in Singapore): one month 157-152 per cent: three months 157-153 per cent; six months 158-153 per cent. Long-term Eurodollar two years 153-153 per cent; three years 153-153 per cent; four years 157-153 per cent; five years 157-153 per cent; six months 158-153 per cent; four years 157-153 per cent; five years 157-153 per cent; four years 157-153 per cent; five years 157-153 per cent; four years 157-153 per cent; five years 157-153 per cent; four years 157-153 per cent; five years 157-153 per cent; four years 157-153 per cent; five years 157-153 per

CURRENCIES AND GOLD

Sterling nervous

against the dollar last Tuesday, dollar rates coupled with the and then fluctuated nervously as decline of sterling in the spot tried to decide whether a peace-ful settlement or a naval battle Steri the most likely outcome of the Falklands dispute.

The pound fell to its lowest closing level since the end of September 1977, at \$1.7495 on Tuesday, and finished the week at \$1.7580 a fall of 2.80 cents from the previous Friday. Support from the Bank of

England was substantial, but succeeded in pushing up ster-ling's trade-weighted index up to 90.0 on Thursday night, which appears to be the middle of the present target range. It ended the previous week at 91.0, and fell to a five month low of \$9.4 on Tuesday.

The pound performed reason-

ably well in forward trading, with the longer periods weakening but three-month finishing little changed against the dollar.

GOLD

Sterling fell to a 44-year low changed, while the rise in Euroforeign exchange market market, widened the dollar's dis-

> Sterling lost ground to most other major currencies, falling to DM 4.26 from DM 4.29 against the D-mark: to FFr 11.0725 from FFr 11.1650 against the French franc; and to Y437 from Y441.50 in terms of the Japanese yen; but rising to SwFr 3.50 from SwFr 3.47 against the Swiss franc.

The dollar was firm ahead of the long Easter week-end. It touched a record FFr 6.3150 against the French franc on Thursday, and finished at FFr 6.30, compared with FFr 6.25 the previous Friday. The U.S. currency rose to DM 2.4225 from DM 2.40; to SwFr 1.99 from SwFr 1.9425; and to Y248.60 from Y247.

Gold reacted to increasing world tension, particularly between Britain and Argentina helped by an upward trend in but also with the USSR and some Eurosterling interest rates. On of its neighbours. It touched a the other hand one-month Europeak of \$358, and finished at sterling ended the week little \$354, a rise of \$261 on the week.

THE DOLLAR SPOT AND FORWARD

April 8	Day's spread	Clase	One month	% p.s.	Three months	p.a.
ÜKţ	1.7490-1.7610	1.7575-1.7585	0.37-0.47c dis	-2.87	0.90-1.00dis	-2.16
reland†	1.4250-1.4310	1.4250-1.4270	0.58-0.48c pm	4.45	1.60-1.45 pm	4.27
Canada	1.2320-1.2340	1.2330-1.2335	0.03-0.08c dis		0.21-0.24dis	-0.73
Nethind.	2.6770-2.6855	2,6820-2,6850	1.72-1.62c pm		4.89-4.79 pm	
Selgium	45.69-45.80	45.70-45.72	7-15c dis		27-37 dis	-2.79
Denmark	8.2075-8.2700	8.2550-8.2650	2-4are dis	-4.36	4-7 dis	2.66
W. Ger.	2.4170-2.4235	2,4220-2,4230	1.30-1.25of pm		3.85-3.80 pm	
Portugal	71.50-73.00	72.00-72.50	70-170c dis			-17.99
Spain	107.05-107.25	107.10-107.15	30-40c dis		90-100 dis	-3.35
Italy	1329-1331	1330-1331			30-33 dis	-9.48
Norway	6.1050-6.1400	6.1100-6.1200	2-4ore dis			-1.96
France	6,2950-6,3150	6.2975-6.3025			13-15 dis	-9.19
Sweden	5.9400-5.9650	5.9460-5.9550	1,25-1,10ore pm		3.25-3.10 pm	
Japan	247.50-248.75	248.55-248.65	1.90-1.80y pm		5.53-5.43 pm	
Austria	16.58-17.005	16.981-18.993	10.60-9.40gra pm		29-26 pm	6.47
Switz.	1.9700-1.9910	1.9895-1.9905	1.83-1.75c pm		5.13-5.05 pm	

t UK and Ireland are quoted in U.S. currency. Forward premiums and discounts apply to the U.S. dollar and not to the individual currency.

THE POUND SPOT AND FORWARD

April 8	Day's spread	Close	One month	% p.a.	Three months	p.a.
U.S.	1.7490-1.7610	1.7575-1.7585	0.37-0.47c dis	-2.87	0.90-1.00dls	-2.16
Canada	2.1550-2.1700	2.1670-2.1680	0.55-0.65c dis	-3.32	1.55-1.65dis	-2.95
Nethind.	4.68-4.73	4.714-4.72%	21-11-c om	4.76	614-514 pm	5.08
Belgium	79.90-80.70	80.30-80.40	25-40c dis		85-105 dis	-4.73
Denmark	14.35-14.56	14.53-14.55	74-84 ore dis	-6.34	181, 20 dis	-5.30
Ireland	1.2230-1.2360	1.2325-1.2335	0.69-0.81p dis		1.93-2.10dis	-6.54
W. Ger.	4.23-4.27	4.252-4.263	11z-1pt pm	3.52	41-41 pm	4,11
Portugal	126.50-128.50	126.50-127.50	145-370c dis		385-900dis	-19.92
Spain	187.50-188.25	188.00-188.20	70-95c dis	-5.26	195-240 dis	-4.63
Italy	2325-2341	2339-2341	23-27lire dis		66-71 dis	-11.71
Norway	10.681-10.7812	10.77-10.78	67 ₈ -81 ₈ 0re dis	-8.49	9½-10½ dis	-3.71
France	11.03-11.10	11.06 - 11.07 -	10 ¹ 2-12 ¹ 3c dis	-12.46	29-32 dis	-11.02
Sweden	10.39-10.49	10.4710.48-	7-Lore pm	0.57	2-1 թա	0.62
Japan	432-439	4364-4374	2.35-2.10y pm	6.11	7.40-7.10 pm	n 6.64
Austna	29.70-29.50	29.85-29.90	12 ¹ - 9gro pm	4.32	37-30 pm	4.48
Switz.	3,45-3.51	3.49 ¹ 2-3.50 ¹ 2	25-21 ₄ C pm		74-6½ pm	8.00
			trancs. Financia 1.70c dis. 12-m			

FORWARD RATES AGAINST STERLING Spot 1.7580 4.26 11.0725 3.50 437 3 month 1.7675 4.2163 11.3775 3.4300 429.7 12 mon 1.7856 4.0855 11.7142 3.2573 410.0 6 monts 1.7745 4.1679 11.6571 3.3656 422.3 1.7622 4.2475 11.1875 3.4763 434.8

Ap	ril 8	April 7		
Gol	d Bullion (fine ounce			
Close \$35312-35412 Opening \$34934-35034 Morning fixing \$352.50 Afternoon fixing \$351,50	(£200 ³ 4-20114) (\$3 (£199 ³ 4-199 ³ 4) (\$3 (£200.969) (\$3 (£199.943) (\$3	571°-3581s 56,75	(£200-2001 ₂) (£2033 ₄ 2041 ₄) (£202.\$26) (£200,851)	
Gold	1 Coins			
Krugerrand \$362.3623; 12 Krugerrand \$187.188 1.4 Krugerrand \$951; 961; 1.10 Krugerrand \$39.40 Mapleleaf \$363.365 New Sovereigns. \$851; 86 King Sovereigns. \$103-104	(£32 221-) 53 (£205) 2061 ₂) 53 (£481 ₄ -483 ₄) 58	89-190 614-9714 914-4014 651 ₂ -367 614-8634	(£207 ¹ 4-208 ¹ 4 (£107 ¹ 3-107 ³ 4 (£54 ¹ 2-55 ¹ 41 (£22 ¹ 4-22 ³ 4) (£207 ¹ 2-208 ¹ 4) (£207 ¹ 2-208 ¹ 4) (£49-49 ¹ 4)	

NITELLIGOU DYNUE 4221'20	(6130'840)	100-	(22001001)
Gold	d Coins		
Krugerrand	£106½ 106½ £53½.54½ £22.22½ £205½.206½ £48¼.48¾ £58½.59 £58½.59 £58½.59 £58½.51½ £248¾.250¼	.596'4-97'4 .539'4-40'4) .5365'2-367 .586'4-86'4 .5103'2-104'2 .5103'1-104'2 .52.98) .544'1'2-444'4) .5346'4-348'4	(£207 ¹ 4, 208 l4 (£107 ¹ 1, 107 ² 4 (£54 l4, 55 l4) (£22 l4, 2254) (£227 l4, 2254) (£49 49 l4) (£58 l4, 59 l4) (£58 l4, 59 l4) (£36 l4, 52 l4) (£250 l4, 252 l4) (£196 l4, 197 l2) (£256 l4, 259 l4

OTHER CU	OTHER CURRENCIES											
April 8	ē	8		£ Note Rates								
Argentine Peso Australia Dollar Brazii Cruzeiro Finiand Maricka Groek Drachma Hong Kong Dollar Iran Rial Kuwait Dinar (KD) Luxembourg Fr Malaysia Dollar Mawa Zealand Dir. Saudi Arab. Riysi Singapore Dollar. Sth. African Rand	1.6775 1.6795 263.55.264.55 263.55.264.55 102.371 12.315 10.233-10.285 145.40° 0.489.0.505 80.30-80.40 4.1250-4.1350 2.8035-2.3075 6.00-8.06 3.7625-3.7725	0.9555.0.9560 149.87.150.62 4.6370.4.6420 63.20-63.40 5.8250.5.8325 82.50* 0.2871.0.2873 45.70-46.72 2.3470-2.3600 1.3105.1.3125 3.4300-3.4310 2.1410.2.1440	Beigium Denmark France Gern.nry Italy Japah Netherlands Norway Portugal Spain	29.75-30.15 88.40-89.40 14.38-14.52 11.00-11.15 4.23-4.28 2290-2340 434-439 4.69-4.74 10.69-10.79 12512-13412 10.40-10.50 3.4412-5.4912 1.412-1.7612								

† Now one rate. * Sell	ing rate.	
\$035-2.3075 1.5106-1.3128 6.00-6.06 3.4300-5.4310 7625-5.7725 2.1410-2.1440 8575-1.8580 1.0565-1.0370 6.39-6.45 3.6715-8.6735	Spain	18134.19314 10.40-10.50 3.4414.3.4914 1,4147-1.7614
1,1250 4,1350 2,3470-2,3600	Portugal	12512.15410
SU.3U-SU.4U 43.7U-43.7Z	MOIWAY	70,00-10.12

EMS EUR	OPEA	N CURP	ENCY	דואט	RATES
	ecu central	Currency amounts against ECU April 8	% change from central rate	% change adjusted for divergence	Divergence
Belgien Franc Danish Krone German D-Mark French Franc Dutch Guilder Irish Punc Itahan Lira	44.6963 8.18382 2.41815 6.19564 2.67296 0.686799 1305.13	45.1992 8.16366 2.39273 6.23523 2.65114 0.692047 1315.28	+1.13 -0.25 -1.05 +0.64 -0.82 +0.76 +0.78	+1.13 -0.25 -1.05 +0.64 -0.82 +0.76 +0.78	±1.5440 ±1.5428 ±1.1097 ±1.3743 ±1.5089 ±1.5689 ±4.1242

CURRENCY	MOVE	WENTS	CURRENCY RATES				
8 ihqA	England	Morgan Guaranty Changes	April 8	Bank rate	Special Drawing Rights	Europea: Currenc Units	
Starting	90.0	-83.5			1291165		
U.S. dollar	116.7	+8.6	Sterling	-		40.56317	
Canadian dollar	88.1	-18.1	U.S. S	12	1.10907	0.98893	
Austrian schilling.	116.7	+26.3	Canadian 8	15.40	_	1.21916	
Beigian franc	94,6	_2.d	Austria Sch.	612	_	16.7971	
Danish kroner	82.8	13.9	Belgian Fu	14	_	46,1993	
Deutsche mark	123.1	+46.7	Danish Kr	11	_	8.16366	
Swise franc	149.8	+100.6	D mark	712		2.39273	
Guilder	114.1	+81.4	Guilder	8	_	2.65114	
French franc	78.6.	_15.2	French Fr	949	=	6,23523	
Franch Hare		58.1					
Lira	54.2		Ura		1474.79	1315,28	
Yen	135,9	+27.8	Yen		275,271	245,256	
			Norwgn. Kr.		: -	6.04981	
Başed on trade we			Spanish Pts.	8	_	105,915	
Washington agrees	ient Decim	ober, 1971.	Swedish Kr.	10	-	5.88911	
Bank of England i	orles (bas		Swiss Fr			1.95651	
4078-4000			Greek Drich	2012	_	63 0001	

April 8	Pound St'rling	U.S. Dollar	Deutschem'k	Japan'se Yen	FrenchFranc	Swiss Franc	Dutch Guild'	italian Lira	Canadia Dollar	Beigian Franc
Pound Sterling	0,569	1.768	4,260	437.0	11,073	5,500	4,723	2540.	2,168	80,35
U.S. Dollar		1.	2,425	248.6	6,298	1,991	2,585	1331.	1,233	45,71
Deuts hemark	0,235	0.413	1,	102,6	2.599	0,822	1,109	549.3	0,509	18,86
Japanese Yen 1,000	2,868	4,023	9,748	1000.	25,34	8,009	10,81	5355,	4,960	183.9
French Franc 10	0,903	1,588	3,847	394,7	10.	3,161	4,265	2113.	1,958	72,57
Swiss Franc	0,286	0.602	1,217	124,9	3.164	1,	1,349	668.6	0,619	2 2,96
Dutch Guilder	0.212	0,372	0,902	92,54	2,345	0.741	2,018	495,5	0,459	17.01
Italian Lira 1,000	0.427	0,751	1,821	186.9	4,732	1.496		1000.	0,926	34,84
Canadian Dollar	0,461	0,811	1,965	201.6	5,108	1.615	2,179	1080.	1.	57,07
Belgian Franc 100	1,845	2,198	5,302	543.9	13,78	4.856	5,877	2912.	2,698	100.

FT UNIT TRUST INFORMATION	SERVICE
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Oct. Austin (James).
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Dec. Bearlor Grp...
Dec. Bearlord 10p...
Oct. Sevan (D. F.) Sp
Sept. Sermid Qualcast

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BRITISH FUNDS Shorts" (Lives up to Five Years)

Five to Fifteen Years 221 1 PESSITY 11-30C 1987-1 150ct Treasury 50r 88-89. 151a Treasury 13cc 1990th 22Mar Each 12-30c 1990. 151m Treasury 84cc 87-50th 101b Treasury 114pc 1991. 5Ap Funding 5-apc 87-91th 50ct Exch. 11nc 1991. 221a Treasury 12-3cc 92th

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270cc Exch. 155c 1997.

1May Treasny 6, pt 19-58#

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19May Treasny 11-2cc 90-04

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21M Treasny 11-2cc 90-04

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22May Treasny 11-4cc 90-04

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50ct Treasury 3c b6 Afr.
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'On Treasury 21-pc. Index-Linked & Variable Rate

INT. BANK AND O'SEAS GOVT. STERLING ISSUES **CORPORATION LOANS**

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covered many areas throughout the UK,

location... with its close proximity to major

John Brazier, General Manager. Hoya

Ophthalmic lens manufacturer, Hoya

Corporation, is the tirst Japanese

and Wrexham proved to be the ideal

FOREIGN BONDS & RAILS Last Die % Red. al Gross Yield Price Stack **AMERICANS** Price Last Dw. THE Pairl Stock
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Trans Can. Pipe. ... CANADIANS **COMMONWEALTH AND** BANKS AND HIRE PURCHASE June Nov.

Bindents Stack Price | Last | Tim | Cru | Gris | Price | Apr. TRAIL BLAZERS Guided and supported by Clwyd's unbeatable industrial development

BANKS & H.P.—Cont. LOANS—Continued agencies, this venture has got off to a For new and growing enterprises like Hoya, through to major established manufacturers like BICC. Clwyd works, In the last 4 years, over 200 companies have chosen Clwyd. We know why. For example, a highly skilled and trainable workforce, with an outstanding industrial Relation's record are as important as the new motorway and dual carriageway link to the national motorway network—15m consumers are just 2 lorry Above all, tinancial incentives equal to the highest available anywhere in mainland G.B. are the key component in

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In helping you we promise positive All the facts are in our colour brochure. For your copy, contact Wayne S. Morgan, County Industrial Officer, Clwyd County Council, Shire Hall, Mold. Clwyd. North Wales, Tel: Mold (0352) 2121. Telex: 61454.

Price of Net Cor Ses P/E DRAPERY AND STORES | Aug. | Feb. Saler's Ser. 186 | 132 | 131 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 | 151 BUILDING INDUSTRY, TIMBER AND ROADS y(Carr (John) 77

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INFORMATION

CHEMICALS, PLASTICS-Cont.

ENGINEERING MACHINE TOOLS

Nov. May Babcock Intl. ...

April Saley (C H.) ...

Feb. Arg. Baley Ferk. 50p. May Bon. Bantro Cons. 20p. Nov. May Bartor Grs. ...

May Be. Benro Cons. 20p. Nov. May Berro Cons. 20p. May Berro Cons. 20p. May Berro Cons. 20p. May Berro Cons. 20p. May Sept. Bernington. Mmil. Asp. Feb. 28 ham Pallet 10p. M. J. S. D. Badé Lighers 519 June Dec. Blackew & Hodge. May Dec. Blackew & Hodge. May Dec. Branthmark £1. Jan. Nov. Brasway 10p. Jet. Sept. Braham Min 10p. Jan. Oct. Branthmark £1. Jan. July Brone Dud. 10p. Movember Brasin Capsel 10p. May Dec. Branthmark £1. July Brone Lod. 10p. Jan. July Brone Lod. 10p. May Feb. Brocketonse Log. July Feb. Brone Capsel 10p. May Feb. Brown £12st 10p. How. Brant £2st 10p. How. Brant £2st 10p. How. Brant £2st 10p. How. July Brone £ Tower Apr. Sept. Brown £ Tawse Apr. Sept. Brown £ Tawse Apr. Sept. Brown £ Tawse Apr. Sept. Brown (John). Sept. Mar. Bulhough 20p. Jan. July Camford £ng. Jan. July Camford £ng. Jan. July Carrior £20p. Feb. Aug. Carrio Enc. ...

GCT. Akay Carterright £ 10p. Feb. Aug. Carrior Enc. ...

Jan. Jan. Conserving £ 20p. Feb. Oct. Chen (A) 20p. Jan. Jan. Dec. Cooker (A) 20p. Jan. Jan. July Concernic 10p. Feb. Sept. Cook W Sef. 20p. Jan. Jan. Brac. Cooker (Fr) 10p. April Oct. Cooper (Irl) 10p. April 20 5.9 9.8 Apr. Apr. 21 171 185 3 Jay Oct. 45 23 10.9 12 10.1 (113) Nov. 12 10.1 (113) No | September | Toronto | September | Septem Apr. Nov. Prestwich Parter
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July Jan R.H.P. Sim. E1
May Nov. R'risomes Sim. E1
Mar. Sept. Ratchiris (G.B.).
Spr. Oct. R'risomes Sim. E1
May Ratchiris (G.B.).
Spr. Oct. R'risomes (Leics.).
Jan. July Richards (Leics.).
Jan. July Shau Francis 200.
Jan. July Spencer Gears 59
Nov. June Sonrax-Sarco.
July Jan. July Spencer (R. 200.).
Jan. July Shau Francis 200.
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Nov. May Stone- Patt E1.
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Jan. Aug. Triplex F Gres.
May Oct. Tropicis F H. 59.
Jan. July Dec. Utt. Engly 100.
July Jan. July Lift. Engly 100.
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FOOD, GROCERIES Cont.

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day in, day out.

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offers you great potential in North East Wales

the Clwyd package.

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303 0.01 28 9 9.6 303 4-1210 0.75 1210 0.75 1210 7.89 288 \$3.11 23.12 14.0 26.10 14.0

PLASTICS

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151 13	0	7.8	0
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FINANCIAL TIMES

Tuesday April 13 1982



Syrian pipeline closure a serious blow to Iraq

Saudis may reduce oil output

another 500,000 barrels a day cut in its oil output in order to check the downward pressure on world prices, the authorita-tive Middle East Economic Survey consermed yesterday.

The Cyprus-based publication. which has excellent contacts with senior Saudi oil officials. said no final decision had been taken. However, it claimed that Saudi production last month had averaged well below 7m b/d, the output ceiling if had set itself following the Vienna meeting of the Organisation of Petroleum Exporting Countries last month.

The Saudi decision may be complicated by Syria's an-nouncement on Sunday that it had closed Irags pipeline to the Mediterranean. The Syrian move will put further heavy pressure on an already stretched Iraqi economy and makes it even more likely that Iraq will be seeking further substantial loans from Saudi Arabia and the other Arab Gulf oil producers during the course of the year.

Iraqi officials said last month that its exports through the terminals in Syria, Lebanon and Turkey were running at about 900,000 b/d. Of this about 350,000-400,000 b/d were

Compromise

U.S. budget

By Reginald Dale, U.S. Editor, in Washington

MR ROBERT DOLE, Republican

chairman of the Senate Finance

hope on

consideration.

whether to reduce automatic

cost-of-living increases in Federal benefit programmes, and if so, to what extent. Mr

O'Neill has taken a firm stand

against such cutbacks unless

Mr Reagan accepts changes in

his tax-cutting programme, on which Mr Reagan has been

A downturn with a difference,

Page 14

Continued from Page 1

might be vulnerable to a take

Firestone

equally intransigent.

Stria drew off up to 200,000 b/d from the pipeline for its own refineries and domestic consumption. But last month it reached agreement with Iran, which it supports in the Gulf

war with Iraq, for the supply of about 160,000 b/d. Iran was the one member of Opec to state openly after the Vienna meeting that it would not help in the defence of the \$34 a barrel reference price for Saudi light crude or accept

a production ceiling.

It is tertain that Iran will now be supplying Syria at a substantial discount with some sources suggesting that the price could be as low as \$25 a

Tehran is thus further undercutting Opec's attempts to main-tain price stability and by winning Syrian agreement to close the Banias pipeline dealing a serious financial blow to its military opponent.

Iraq's ports have been closed since the start of the Gulf war in September 1980. With only the pipeline to Turkey now in commission, its oil revenues for 1982 are unlikely to be above \$7bn, compared with earlier forecasts of up to \$9bn.

recently received during a major Iranian offensive will have sharply increased its already heavy arms purchasing

requirements. Meanwhile, the Saudi news oil sales have dropped dramati-agency announced that the Opec cally—and with them the committee, which had been country's foreign exchange earn-formed in Vienna to monitor the ings. operation of production ceilings by member states, had decided to postpone a meeting planned for later this month.

The reason for this was given as the decision by international oil companies to stop exerting pressure on Nigeria to lower its prices. The Saudi agency said the oil companies " had changed their mind about exerting pres-sure on Nigeria" to break the Vienna agreement. Opec has threatened to black-list companies which reduced Nigerian

Nigeria had earlier accused Western oil companies of using "blæckmail" against her as part of a general bid to "destroy" Opec, according to reports from Opec's official news agency. The reports say Nigerian President Shehu Shagari said

last week that the oil companies' blackmail" was part of a grand design by the indus-Last year. Iraq arranged for trialised countries to destroy loans totalling about \$22bn Opec." President Shagari is said pumped to Bananias in Syria from Saudi Arabia, Kuwait, to have warned that the

countries through economic exploitation—if -they allowed to succeed

President Shagari's claims

Crude sales have plummeted because Nigeria's customers — oil companies, independent traders and government buyers —have refused to buy at the Opec-fixed price of \$35.50 a barrel when comparable North

Sea oil is selling at \$31 a barrel. Oil company officials said last week there was no sign of a recovery in Nigeria's production which fell to around 600,000 b/d at the end of March following the Vienna meeting of Opec. President Shagari's comments about a "battle royal between

industrialised exploiters," how-industrialised exploiters," hawever, would indicate that Nigeria is finding it increasingly difficult to resist the pressure to lower her crude, prices. And Nigeria's ability to maintain official prices is crucial to the success of last month's Opec agreement when members agreed to reduce their collective output celling by 2m harrels a day but to keep prices

Shop stewards reject BL collective bargaining plan

BY ARTHUR SMITH, MIDLAND CORRESPONDENT

Committee, said yesterday he hoped President Ronald Reagan would this week indicate reforms has run into new whether he could accept a broad trouble. Shop stewards from compromise on his controversial the company's two biggest 1983 budget proposals. unions—the transport workers Mr Dole has been a key figure in secret budget negotiations and engineers-have foiled to between the White House and support the proposed agreement Congressional leaders. He said for setting up a new collective

bargaining structure. he hoped for a similar sign from Union activists objected to the Mr Tip O'Neill, the Democratic compayn's disapproval of closed Speaker of the House of Representatives. The emerging comshops and agreement to use only promise would "go nowhere" outside contractors who employ unless it was endorsed by both would contravene the forththe deal had improved coming Employment Blil ,now greatly in the past week and were now "about 50-50," Mr in its Committee Stage in the

Dole said. The compromise Commons. Opposition would involve "billions of stewards also centres on condollars in new taxes." he added. cern that the agreement will Mr Dole said he could accept 4 per cent income surfax on confirm the union's weak posihigher income groups, a pro-

"There is a fear that the posal said to have been discussed in the recent negotia-tions, but he stressed it was proposed new procedure is designed to seal restrictions placed on trade union activities throughout BL," a union official only one of many ideas under One of the major points of contention in the talks has been

said last night. BL Cars had placed great hopes on the proposed new bargaining structure, under negotiation with the unions for the past three mouths. It is seen as a break from the confrontation style of management successfully employed by Sir Michael Edwards, the BL chairman, who retires at the end of the year.

A move by the executive of the engineering union last week to recommend acceptance was rejected by its 40 senior BL labour.

BL CARS' much-heralded pack-age of industrial relations ham.

Senior stewards of the Trans-Port Union expressed reservations about the package, but adopted a similar stance. Transport Union stewards throughout BL Cars will be issued with copies of the proposals and asked for their views in writing.

Mr Grenville Hawley, national automotive secretary of the Transport and General Workers' Union, refused last night to be union labour. BL refused to drawn on whether he was hopewrite these commitments into ful of signing an agreement the agreement because they with the management when the He said shop stewards, because of the past policy of con-

> among shop picious of the management's attitudes and itentions." Teh divided and confused resnonse of the shop stewards to BL's proposals must cast doubt on the authority of any reforms. Some officials fear the company

frontation, were "highly sus-

may again be forced to impose the deal because of the inability of the shop stewards to offer a coherent voice. Debate among the stewards has focused on whether or not

shop floor opposition would be forthcoming in the current environment of high unemploymetn rather than the merits of the proposals. One controversial issue is the

use of contractors. The com-pany, in line with the Tebbit Bill. refused union demands to write in a clause that contractorse should use union-only

There are fears, particularly at the Longbridge plant, Birmingham, that the company will turn increasingly to contract labour to cut costs. Though the draft proposals remain silent on the issue, the unions made it clear they would continue checking union cards of contract labour regardless of

One union official commented: "This was supposed to be a charter for peace. The problems have been papered over but they will inevitably erupt again.'

John Griffiths adds: Sales of BL cars in the five main Conti-nental markets—Italy, France, West Germany, Holland, and Belgium - in March reached more than double the level of the previous year.

The 8,896 total - compared with 4,460 last year-was helped by the first full sales month for the Triumph Acclaim, over 1,200 of which were sold. The new economy version of

the Metro, the City, also helped lift sales, particularly in Italy where the 2,629 Metros purchased set a record for any Continental market since the car's launch there a year ago.

BL looks set for a further improvement in its Continental penetration from the low point of \$2,500 sales for a full year reached in 1980. But even if a monthly rate of 9,000 cars were to be sustained for the rest of the year, it would still be far off the peak 187,000 units achieved in 1968.

As well as bringing in badly diplomatic isolation from all mediation needed cash, selling Hertz would also take a substantial amount of associated borrowing out of RCA's balance sheet. But Wall

Street is uncertain about whether Firestone will be able to pay RCA's price. Britain's fleet.

Firestone's share price slipped by \$4 to \$10.50 yesterday morning. At this price the company is valued at roughly

Falklands Continued from Page 1

except a handful of other Latin American countries, Argentina crisis. Economic ties between was vesterday preparing to the two countries are close, and invoke an Inter-American the Soviet Ambassador in Treaty of Recoprocal Assistance Buenos Aires has made frequent which would oblige its members visits to the Foreign Ministry to come to its aid to confront over the past few days.

Hints have also been dropped politicians and trade union while a former a former and the Government may be figures are travelling to Europe Rome, Sr Raff prepared to play the Soviet card to seek support for their Raymonda has a it holds in reserve if the U.S. country's case in the face of patched to Italy.

mediation does not prove Britain's successful mobilisa-successful, in defusing the tion of Government opinion Meanwhile, leading Argentine

among European neighbours. Sr Francisco Cerram, the head of the small Christian Democrat party, is representing

Former Turkish Prime Minister rearrested

BY METIN MUNIR IN ANKARA

MR BULENT ECEVIT, the former Turkish Prime Minister. was rearrested in Ankara yes-terday only hours after a mililary court, hearing charges that he had given an interview to a Norwegian newspaper in defiance of Government orders, had ordered his release from deten-

Turkish authorities detained Mr Ecevit, the chief opponent of the military regime, on Saturday and charged him with issuing false statements to a Norwegian newspaper which were considered detrimental to Turkey's prestige and authority abroad.

After yesterday's court appearance, Mr Ecevit's wife poration. was told by a military official at the Army Language and Intelligence School where he was being held, not to wait for her husband. This time he was to the British Broadcasting Cor- or two.'

TURKEYS military authorities yesterday accused the Ankara correspondent of the Financial Times and the British Broad-casting Corporation. Mr Metin Munir, of writing false and unfounded stories. He was threatened with deportation.

more than ten years, was one of the strongest moves against the foreign press in Turkey since the military seized power in

when three policemen visited him late last night and told him to be back in Ankara by mid-day today and to contact martial He did so and was told by a colonel that he had been sending

Mr Munir was charged last year under a penal code article barring the dissemination of false information about Turkey abroad, but the charges were later dropped.

firmed that Mr Ecevit would remain in detention while the authorities examined the BBC interview. He said the 56-year-

Mr Ecevit arrived at the martial law court in Ankara's Mamak military eamp to face the charges made against him on Saturday, in a green army minibus accompanied by seven appearance before the one-man

armed military policemen. His on charges of giving interviews to the German magazine Der

EEC to aid steel and shipbuilding regions

By Anthony Moreton, Regional

THE EUROPEAN Commission is about to announce a package of aid for steel and shipbuilding areas in Britain as part of a programme for all member countries with these industries.

A \$30m scheme, spread over five years, is being allocated to Britain under the regional development fund. Some £18m of this will go to steel areas the rest to those parts with heavy concentrations of shipbuilding.

The money will be pr marily available for the improvement of run-down communities. Plans for rejuvenating these will have to be forwarded to the Government, which will then transmit the applications to Brussels.

In addition, funds will be available for promoting new ideas in manufacturing and service industries, for establishing consultancy firms and community services, and to allow small manufacturing units improved access to risk

The first of these schemes, aimed at run-down areas, will be funded jointly by the UK and the EEC. The remainder will be the EEC sole respon-

The steel areas qualifying will be Strathclyde, Cleve-land, Corby and Wales. This excludes both Scuntherpe and Consett. When the scheme was drawn up two years ago, it was thought that both were small pockets of declining steel production in otherwise prosperous areas.

Economic changes since then have depressed the two areas, and may well be included when the scheme bas got under way and reviews are being considered.

The commission regards the scheme as an experiment. Although it has been given a five-year life, the project will probably be evaluated at the end of next year or early in 1984. If it proves a success, the British Government might consider extending its

It had been hoped to make an announcement about the seel part of the scheme before Easter, but this proved impractical for administrative reasons. The shipbuilding part, which could be of considerable help to places like Beifast. Typeside and Clyde-side, should be announced within a month or two.

The EEC initiative is considered interesting in Britain because it is directed at small concerns employing fewer than 250 people and fills a gap that is not met by UK resources.

Weather

UK TODAY

DRY WITH bright periods. Occasional rain in some areas. Generally cold. London Central E. and S.

England, Midlands, S. Wales Mainly dry, sunny intervals. Max. 8C to 12C (46F to 54F). Central and N.E. Scotland Cloudy, rain at first, sunny intervals developing. Max 8C

to 10C (46F to 50F). N. Wales, N.W. England, N. Ireland, rest of Scotland Mainly dry, bright periods. becoming cloudy. Max. 9C to 11C (48F to 52F).
Outlook: Mainly dry. Rail in the

WORLDWIDE

North. Night frost.

Democrat party, is representing the Multi Partidaria, the political opposition front on a trip to Spain, Italy and the Vertican: while a former Ambassador to Rome, Sr Rafael Martinez Raymonda has also been despatched to Italy.

Tearrested

Tearre

1955 when the troops did go in, the markets were "remarkably calm "-Gas 3 per cent 90-95s were rock-solid at £67s. The disquiet in the City gathered pace in the days that

Share prices slumped again on November 13th, as oil sup-

> horror stories percolated through from the heartland of industry. On the 14th, they were back to levels not seen since the 1954 bear market, and a new two-year index low of 1672 was touched on November 20. Lex commented, rather uncomfortably, that the markets were healthier for the weeding out of speculative positions"-there were some worries, though, about Account Day. The next day the Treasury bill rate moved above 5 per cent. Within a week, the equity market, depressed by the largest ever industrial financing in the shape

withdrawal in accordance with the UN timetable—phrases such as "humiliating fiasco" were not employed. The market turned on a sixpence. Equities Not even the Lex columnist- had their best day for eight was perturbed—he padded out months, putting on 3.3 points. On the evening of the fourth the Chancellor announced that invasion, as it happened) with the reserves had fallen by advice, which it would be \$279m in November — which

A slow boat to Suez

THE LEX COLUMN

Anyone looking through 25rear-old copies of the Financial Times in search of the City's response to the British Govern-ment's last major military adventure is bound to be struck by an extremely familiar com-mercial landscape, U.S. interest rates were rising—the Treasury bill rate nudged above 3 per cent in October 1956 for the first time since the war, with Mr C. Canby Federal Balderston of the warning Reserve

expansion At home, the railway unions vere asking for 10 per cent wage increases (they got 3 per cent, a few months later). A fierce redit squeeze—bank rate had been at 5½ per cent since February—was beginning to bite. Car sales were slumping: Dunlop had just cut its dividend. There were redundancies at T.I. Cycles. The Rank Organisation, as ever, was closing down cinemas.

Defence cuts

The international picture was most disagreeable. Apart from the smouldering problem of the Suez Canal, Hungary had just been invaded by the Soviet Union and there was trouble in surrounding Gomulka referred to in a learned FT article as a "rehabilitated Titoist" (Mr Nagy in Budapest, was a Titoist tout court). This did not stop the British Government from cut-ting defence expenditure—by £9m in a package of cuts announced by the Chancellor,

Mr Macmillan, on October 26.

The stock market was subdued by the cost of money and the profits squeeze. Both the giltedged and equity indices were some 7 per cent down over the 12 months up to the ultimatum the FT 30-Share Index stood at 177.7 on that day. In the week between the Anglo-French ultimatum over Suez on October 30 and the invasion the market eased further. But of a £40m ICI convertible (who investors were chiefly absorbed says that ICI always raises on October 31 by a contro-money at the top?), was down versial repayment of pre- to 181.5, and gilts had fallen ference capital by Harrods by two points or more. (Buenos Aires), and although there was pressure the following day, when the dollar premium rose to a 4-year high of 8 per cent, the newspaper described equity trading in terms of a "downward drift."

the column of Monday November 5th (the day of the airborne invasion, as it happened) with



followed as the political storm blew up—a storm about which the FT maintained an alumst saintly reticence. The 30-Share Index began to drop decisevely late in the second week of November. Having fallen 3 points on the 8th it eased further on the revelation that the "Egyptian expedition" would cost £35m to £45m, not enough in the Treasury's view to upset the disinflationary balance of the April budget."

plies began to dry up and o 161.5, and gilts had failen In 1956 as in 1982, the City two points or more.

—which earns its living out The paper of December 4th of international trade and

churlish to disinter, on "picking must have been something of a and the stability of the British a portfolio for growth." Even shock to FT readers, who had Government in particular.

heen assured tiournalists being as cullible then as they are now) that the authorities had not needed to intervene heads to support sterling. A drawing on the IMF was announced and a swingeing increase in indirect taxes—petrol. for those who could find any, went up by is 5d a gallon. The jobbers, who had come

in for a certain amount of ster for their very reasonable decision to widen tradia-spreads, tried to mark pring down sharply on Mr Macmilland disaster markage. These disaster package. They was began to run-putting on 125 points in seven business days. The week before Christmas the Treasury bill rate at tender was the lowest for ten months, and although the FT Index at Christmas was 22 points down on the previous year at 1782 with the Government Securities Index down 6 points at 8430 both were pointing clearly up

On New Year's Eve there was frantic activity in the gift-adject market, centred around the short tap; Lex suggested the recovery might be "too het is last." The departure of the Prime Minister, Sir Anthony Eden, on January 9th, was regarded as good news meant there would be m General Election. There was another splendid day on the 14th, with gilts up by point, and then the new Print Minister proposed more cuts in defence. There was to be no more spending on "things we don't need, or commitments we don't need, or communation we can't sustain." By the sad of January long sted giltedge, yields had moved down from the November high of conf. 5 per cent to around 41 per cent. The official reserves continue to fall in December (net of the IMF drawing) and January, had on February 7 the market got the half point cut in bank rate that it had been looking for.

Losing face

money any day-showed itself uncomfortable with the sudden adoption of a high profile by the British military, and not at all worried by subsequent humiliation. In the first instance, the markets did not principally respond to bugeran fears about the cost of financial a war, but to worries about the international crisis in general

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The warning to Mr Munir, a correspondent in Ankara for Mr Munir had been on holiday on Turkey's Black Sea coast

"false and unfounded stories" about Turkey and would be deported if "one more such report appeared."

A military spokesman conbeing detained in connection old social democrat would with an interwiew he had given appear before a court "in a day

court lasted about ten minutes Spiegel and to Dutch television.

Mr Ecevit's detention comes in the wake of a stern warning from General Kenan Evren, the head of state and chief of staff, to former political leaders, whom he toppled 19 months ago, that he would not hesitate to take the "severest measures" against former political leaders unless they stopped all political activity.

The military administration dissolved all of Turkey's parties and banned former politicians from making public statements. Mr Ecevit, the only politician to break this ban, has already served a two month jail sentence. He is to appear before a martial law court on April 29 on charges of giving interviews

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